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# The Computer PAPER

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## Commentary

- 6 From the Editor
- 10 Letters

## New & Notable

- 12 What's New
- 14 Selfmade hits into Corbis' cross-media publishing plan
- 16 Battle of the Internet losers
- 18 Handheld or hands-free, cell phones stymie drivers
- 21 Half a billion people online, survey says

## Connectivity State of the Union

- 14 Connectivity state of the union  
TOP 500 sites at broadband, dialing, ISP's, DSL, hi-speed
- 22 Hands on USB 2.0
- 24 What about HomeRF?
- 26 Hands on IEEE 1394 (FireWire)
- 28 Connectivity information sites
- 34 Hands on IEEE 802.11 (Wi-Fi)

## Hands On

- 28 Office suite showdown 2002
- 30 PC Accelerator slows system but speeds up Net
- 38 How necessary is CareDisk Essentials?

## Platform News

- 42 Windows XP Preview  
Part 2: Features and functions highlights
- 43 Apple knows System 9.3.3 was the last Classic update
- 42 Processor Wars: Intel hits 2 GHz

## Tech Enterprise

- 44 Moving on up  
ASPs offer huge enterprise tools to small businesses
- 44 Retailers urged to look beyond online profits
- 49 How private? Not very  
Pay tool accesses e-commerce Web site privacy practices
- 77 Fingershivers nudgeing future of e-commerce, study finds

## Online & Connected

- 50 Linux browser wars
- 50 Moving your own Web site (Dynamic Web pages) today: PHP
- 50 People change once they go broadband
- 67 Boston dispute fast track 'banned'

## Careers & Training

- 69 Office Suite Training: Word fields
- 69 Java Tutorial: Strings on Java
- 69 Quick Tip: Fabulous Excel functions
- 88 Site reference helps new users drive into ERP

## Reader Services

- 106 Advertising Index
- 106 Business Directory
- 110 Classified
- 110 User Groups

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AD RELEASE ..... Nov. 25  
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# Is there anything new under the sun?



Dan Finkelstein  
FROM THE  
EDITOR

**I**t's tough to be in the computer business these days. If you follow the high-tech news, the reversal of fortune is laid out daily in black and white—and in many cases, red-gloving red. As I write this in the dying days of summer, I've just read that Intel-owned Intel Video Gateway is recruiting from Asia and may also visit from Europe later this year. I've also read that Kenner handheld dealings, Palm and HandSpring are just shadows of what they were a year ago, and as late as last month when we covered And on it goes.

From a business perspective, the outlook remains grim. That means that research and development goes on, and technology users expect that there will be another year big thing. Figure on it where it will come in is the challenge. One place to look is the Intel Developers Forum. Since 1995, the company has launched out Intel Developer PCs, awards to companies whose products make PCs easier to use.

Some would argue that you can't use "PC" and "easy to use" in the same sentence, and there are days when even PCs' most assumed product features would argue. So not to speak about such things as common sense. You can check out the winners on Intel's site ([www.intel.com](http://www.intel.com)), but I was generally underwhelmed by what I read.

For example, among the noteworthy features of one of the winners was "an easy-to-find on/off switch." Well, duh. Another notebook's standby and hibernation features were deemed to be noteworthy. Several years ago, I did a 400 notebook from the same manufacturer that had built-upon hibernation—so what's the big deal?

To be fair, there were some interesting implementations that one could legitimately call advancements in ease of use. Built-in wireless networking, FireWire ports and wireless cards and expansion slots. These appear to small subsets of computer users, but if you fit the profile, you'll like the innovation. Tool-less cases, for example, mean being able to open up the PC and add or remove expansion cards without having to remove or add a bunch of screws every time. And FireWire is the essential port for

anyone working in digital video.

I became a true believer of FireWire when I took a DV camcorder on vacation this summer. On returning home, I simply connected a cable between the FireWire ports of the camcorder and a DV drive, fired up the editing software (included with the computer), and was editing the video minutes later—it really was that simple the simplicity of movie making (well, of course, another matter).

The story of purchasing the novelty of FireWire in 2001 will not be lost on our Mac readers, who can rightly point out that FireWire has been a standard feature on a single of generations of Macs, and that it's Apple's technology in the first place. But I digress.

One PC that didn't make it on the Innovative PC Awards list, but which was presented at the Intel Developer Forum was the Tashan, recently developed by Intel and Logitech Holdings. This concept PC addresses a concern that has been discussed in our Letters column for the past few issues—noisy computers.

The announcement of the Tashan was actually sent to me by Seagate, whose contribution to the project is the hard drive. Seagate says its Barracuda ATA IV drives are equipped with fluid dynamic bearing motors, which make them "virtually silent." The Tashan also uses cooling fans that are designed to operate quietly.

Overall, the concept designs includes a few other interesting advancements, such as USB 2.0 and a notebook computer-like low-power sleep mode, making a available more quickly than if it were that complexly off.

No FireWire in the Tashan, though, and that thunders the dilemma and potential traps facing mainstream PC designers. If you're looking for volume, USB 2.0 is the way to go. Most peripherals will eventually support the updated USB spec—many more than will ever support FireWire.

Yet FireWire is firmly entrenched in digital video, and is an emerging standard for digital still cameras too. Sony is one of the

few vendors besides Apple that provides FireWire support out of the box. It makes sense for Sony to do so, since the port complements what is already found on Sony camcorders. For PC makers without that vested interest, how even going after the limited market may not be worth it.

The FireWire is just one example—you can find other sub-groups of PC users with specialized needs for sound or video or storage wanting to be served. PC makers may want to dismiss niche customers, but they may discover that tomorrow's PC game is nothing but niche customers.

## Feedback phase

And speaking of trying to figure out what the customer wants in the fall, we start where we've accomplished in The Computer Paper during the year, and begin to develop next year's game plan. Asking readers what they think has been a central part of that planning for many years. We held some focus groups a few weeks ago, and you may have noticed invitations to fill out a readability questionnaire, which can be found on our Web site ([www.cmp.com](http://www.cmp.com)).

I would also invite you to email me directly with suggestions for changes, issues, or specific topics you'd like to see covered on the pages of The Computer Paper next year. We can't be all things to all people, but I think we've maintained a pretty good track record of covering topics many of you find useful and interesting. Readers going as a people paid in one direction or the other has been an important part of our planning, so let us know what you're thinking.

Enjoy the issue  
David Tashan, Editor

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**'Out with the old' sports comment**  
In the September issue of TSP, the letter from the managing editor, "Out with the old" caught my attention, as I am cur-

rently involved in a project where the disposal of old 486-class hardware and 35-inch monitors was required.  
In some Canadian cities, there are operations that recycle antiquated equipment and in some cases, pay you for working hardware still in demand (e.g., Persian systems, monitors, RAM, network cards, floppy drives, etc.). I offer this suggestion

as a way to help prevent our landfill from filling with dead and other such electronic waste. Let's help Mother Nature along!  
Gert Bauer

Negan Johnston's editorial was certainly timely considering the vast numbers of computers which become obsolete so quickly these days.

Since it's difficult to find a user or to recycle many old computers, there's another solution which Mr. Johnston did not mention. There are dozens (if not hundreds) of computer collectors who display their obsolete products on Internet Web pages. Many show photographs of their collections, which are housed in basements and garages, and they often solicit donations to their collections. Perhaps these computer museum entrepreneurs would be happy to have more donations.  
George Dunbar

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I've just read your article, "Out with the Old," in the September issue. You mention in your article that complete 486 systems are thrown away in most cases to someone who has never heard or used a computer thing happening too quickly as it is frightening.

If people were more aware that people in their own country needed a computer for simple learning, they would think twice before throwing away a perfectly good system even if it is a 486.

Francis Gordon

#### Don't forget the Linux PDA

In September's Lab Report (see "Road to level combat"), you looked at handheld PDAs. In "The rest of the answers" section, the iRazrVibe and Pison were mentioned. There's one more that should have been in that section. I saw an ad for a recent issue magazine for an Agnès VU PDA. The operating system is Linux. It's available at Agnès-VU Web site: [www.agnesvucorp.com](http://www.agnesvucorp.com) for US\$248.

Even considering the exchange rate, this seems quite a bit less expensive than the other products in the review. That makes me wonder about the cost of the operating systems for the other products. Anyway, hopefully this model will be reviewed in an upcoming edition of The Computer Press.

Bob Davidson

ITP reader: Yes, we are quite familiar with the Agnès—we saw it at the Fall Comdex in Las Vegas a season or two ago. We've yet to obtain a review unit, but when we do, we'll certainly be writing about it.

Sadistically, we did not mean to dis-empower the significance of either the iRazrVibe or the Pison. We recognize that Pison had a mature and stable product when Windows CE was still bickering. And until a couple of years ago, one of our contributing editors, through his connection with Pison in England, always had advance knowledge about products that were in the pipeline. Unfortunately, Pison never seemed to catch on in North America.

And with the iRazrVibe, we are almost embarrassed by the enthusiastic coverage we've given it over the past year. We still love it, and a couple of editors have plotted down their hard-earned cash for them.

Continued on page 24

Thinking thin...



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#### Articles doubles your listening pleasure



Creative Technology ([www.creative.com](http://www.creative.com)) original Nomad Jukebox MP3 player, with a built-in 8 GB hard drive, revolutionized the world of portable digital audio, allowing people to carry 100 hours of music. Apparently that wasn't enough, as Creative's Web site popped up telling people how to upgrade their Jukebox drive to 20 GB by replacing the hard disk, allowing up to 333 hours of music storage.

New Creative has saved everyone the trouble by issuing a 20 GB version of the Jukebox (and, in the process, saving people from having to void their warranties). The new player is otherwise the same as the original—about the same size as a portable CD player, with power provided by four included rechargeable AA batteries.

Out of the box, the 20 GB Jukebox can handle both MP3 and WMA (Windows Media Audio) files, and the firmware can be flash-upgraded to handle future audio formats as they become available. The new larger version of the Nomad Jukebox will be available for US\$499.

—Sean Connelley

#### Kodak expands EasyShare family



Customer Kodak ([www.kodak.com](http://www.kodak.com)) has expanded its EasyShare family with the addition of three new digital cameras: the DC1090 Zoom, DC1200, and DC1215 Zoom.

The DC1090 Zoom features 3.1 megapixel maximum resolution, 6X zoom capability (2X optical, 3X digital), and a choice of automatic and manual settings. It ships with an 8 MB CompactFlash (CF) card.

The DC1200 has a 3X digital zoom and maximum resolution of 3.1 megapixel. It has 8 MB of internal memory and an expansion slot that accepts both MultiMedia Card (MMC) and Secure Digital (SD) removable media formats.

The DC1215 Zoom has 3.1 megapixel maximum resolution, 6X zoom capability (2X optical, 3X digital), 8 MB of internal memory, and, like the DC1200, an MMC/SD slot.

The a suggested list price is US\$469 for the DC1090 Zoom, US\$399 for the DC1200, and US\$399 for the DC1215 Zoom. They are all bundled with enhanced Kodak Picture Software.

The cameras in this series are compatible with Kodak's EasyShare camera dock (available separately for a suggested price of US\$79.95), which automatically uploads images to a PC and recharges the battery when the camera is in the dock.

Kodak has also announced new accessories for the EasyShare family. The Kodak EasyShare Travel Kit includes an 18-MB rechargeable battery pack, rapid charger, camera bag, and interchangeable power clips for international travel. (110 to 240 volt). The travel kit has a suggested price of US\$79.95. The rapid charger, which can refill the battery pack in about 2.5 hours, is available separately for a suggested price of US\$34.95.

—TGP Staff

#### Cardless telephone module for home



Alicia Networks ([www.alicianetworks.com](http://www.alicianetworks.com)) has unveiled the Parallax Cardless Telephone Springloaded—a module for the Handspring Visor PDA.

Attached to the Springboard slot on a Visor, the Parallax acts as a cardless phone but provides access to all the numbers stored in the handheld's address book. Users simply highlight a contact's phone number and tap or the dial button to make a call. Users can also take advantage of services such as call 30, conference calling, and call tracing using this device.

The Parallax package includes the Springboard module and a charging and synchronization cable for a suggested retail price of \$179.

—TGP Staff

#### Open Atmosphere is up for evolution



Adobe Systems ([www.adobe.com](http://www.adobe.com)) has announced plans to open access to the Community Server source code and protocol for Adobe Atmosphere. According to the company, this open access will give developers a powerful platform for creating and customization of immersive, interactive 3D online communities—including art galleries, museums, automobile showrooms and space exploration.

Atmosphere is a complete system for creating interconnected and populated 3D immersive environments. The platform currently includes Atmosphere Builder (the world authoring tool), Atmosphere Player (a Web browser plug-in), and Atmosphere Community Server (which enables real-time interaction in a shared immersive 3D Web environment).

First available in a public beta release in March, there have been more than 700,000 downloads of Atmosphere, and more than 3,800 company words are now online and community-enabled, according to Adobe.

"In the early days of the World Wide Web, the Apache release of the source code for the Apache server allowed the Web to rapidly grow to include a diversity of sites and services," said Michael Kaplan, senior engineering manager for Adobe Atmosphere. "We expect the release of the Atmosphere protocol and availability of the server source code to similarly help expand the size and diversity of the Atmosphere universe of interconnected and populated immersive spaces."

The Atmosphere Open Server is expected to be available for download this fall. The free Atmosphere Public Beta is currently available for download at Adobe's site.

—TGP Staff

#### Fujitsu inside drives "black torrent"



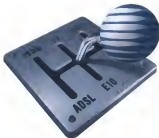
Fujitsu Canada ([www.fujitsu.ca](http://www.fujitsu.ca)) has introduced a new line of 2.5-inch mobile hard drives, the WINbox series, available in 10, 20, 30, and 40 GB capacities. All come with an UltraATA/100 interface, 4,000 spin speed, and a 2 MB buffer. The new drives are among the first to have a new operating shock tolerance of 80G. The device has a maximum latency transfer rate of 30 MBps, making them well-suited for intensive mobile computing applications.

—TGP Staff

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| Who should use it? | <ul style="list-style-type: none"> <li>Companies with small LAN or few users with server</li> </ul>   | <ul style="list-style-type: none"> <li>Companies with small to medium size LAN</li> <li>Enterprises that want high speed at a lower price than T1</li> </ul> | <ul style="list-style-type: none"> <li>Companies with greater bandwidth requirements</li> <li>Companies with medium size LAN</li> </ul>  | <ul style="list-style-type: none"> <li>Companies with medium to large size LAN</li> <li>Companies who need greater speed than T1 but do not require OC3</li> <li>Companies who have outgoing T1</li> </ul>                             | <ul style="list-style-type: none"> <li>Large "load centers" or an ISP that requires fast and easy access to outside bandwidth</li> <li>Companies who need multiple providers to suit business needs and increase network redundancy</li> </ul> |
| Why use it?        | <ul style="list-style-type: none"> <li>Cost effective</li> <li>Endpoints can access Web and e-mail</li> <li>Priority-maintained service Web servers can be connected to the Internet</li> </ul> | <ul style="list-style-type: none"> <li>Synchronous, can access Web and e-mail</li> <li>Handles frequent uploads and large file attachments</li> </ul>        | <ul style="list-style-type: none"> <li>Handles frequent uploads with large file attachments</li> <li>Allows videoconferencing applications</li> <li>Allows fast busy Web or FTP site</li> <li>Supports large Internet Virtual Private Network (VPN)</li> </ul> | <ul style="list-style-type: none"> <li>Endpoint can access Web and e-mail</li> <li>Connects Web or e-mail servers to the Internet</li> <li>Bandwidth supports applications such as VPN, Voice Over IP and videoconferencing</li> </ul> | <ul style="list-style-type: none"> <li>Supports large file transfers without the expense of dedicating bandwidth requirements</li> <li>Can be scaled as needs change</li> </ul>  |

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## Bankruptcy court approves Telus bid for PSINet Canada

**SANITOURN**—Canadian phone company Telus ([www.telus.ca](http://www.telus.ca)) said in late August that a court overseeing the dismantling of bankrupt Internet service provider PSINet

([www.pslnet.ca](http://www.pslnet.ca)) has approved its \$77-million bid for the ISP's Canadian assets. Telus, which is expanding from its western Canadian base as a phone company to

build cross-country wire and data networks, announced in late June that it had negotiated the sale with Ottawa, Va.-based PSINet. However, as part of the bank-

ruptcy proceedings in both the U.S. and Canada, PSINet was able to hold the door open for more attractive offers.

In a statement issued in late August, Telus said the next step is for PSINet to obtain court approval to wind up the deal in September. It said the final purchase price is "subject to final adjustments" and will be paid in cash and through the assumption of some PSINet debts.

When the sale is complete, Telus will pick up 250 employees, PSINet's Internet data center in Toronto, and some 8,400 corporate customers.

Last year, PSINet had revenue of some \$20 million in Canada, most of it generated in Ontario, although it has 50 points of presence across the country. Telus said it has already secured regulatory approval for the deal. PSINet, which filed for bankruptcy protection June 1, has announced separate deals to sell much of its assets here in Asia, Latin America and Chile.

—Allywyler



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### New Kodak paper for subjects

In addition to its new digital camera offerings, Kodak has announced two new iPrint photo paper products.

Ultara Picture Paper for Borderless iPrint Prints is a high-gloss paper for prints that have the look and feel of traditional, acid-free. Edge-to-edge printing is made possible with the micro-perforated borders—users print and tear off the perforated unprinted portion of the sheet. A 35-sheet pack has a suggested retail price of US\$16.99.

Kodak Picture Paper for iPrint Prints is matte or soft-gloss paper that is coated on both sides—ideal for printing two-sided album pages according to Kodak. A 25-sheet pack is expected to retail for about US\$19.99.

—RP Staff

### Letters

Continued from page 10

#### Get more on safety concerns

Here is one solution. I can tell you the problem of safety computers, notebooks with maximum power management.

I occasionally use two Toshiba notebooks, which have no fans. The main noise comes from the hard disk spinning. With maximum power management implemented, hard disks behave like chattering. They spin only during read or write operations. While this saves lots for those operations, it also makes the computers quiet enough that I can use them to write notes on music while listening to it.

Derek F. Nersisyan

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# Connectivity state of the union

By Frank Lark

There's been a lot of concern that year about declining personal computer sales. But while the basic desktop box may be slightly passé just now, there's a whole new frontier opening up. The excitement is shifting to how these beige boxes connect—to each other or to peripheral devices.

Four new connectivity technologies are just coming into their own, bringing new capabilities to the familiar personal computer. They are IEEE 1394 (FireWire), USB 2.0, IEEE 802.11 (Wi-Fi), and Bluetooth.

Two of these options are wireless and two are not. Just as noted in last month's "Desktop computing" applications, while the other two are coming from a consumer electronics angle, pushing us closer towards that "convergence" we keep hearing about. Below is an easy way to categorize these four connectivity options.

| Approach             | Wired       | Wireless  |
|----------------------|-------------|-----------|
| Personal computer    | USB 2.0     | IEEE 1394 |
| Consumer electronics | IEEE 802.11 | Bluetooth |

Here's how each of these technologies stacks up.

## USB 2.0

"From a marketing perspective, it's just-late," raves up Friends Schere, desktop marketing manager with Adaptec Inc. ([www.adaptec.com](http://www.adaptec.com)). Schere points to that consumer will perceive USB 2.0 in the available upgrade from the ubiquitous USB 1.1 interface.

And why not? USB is now built into every PC and Macintosh, just about all new peripherals support it, from printers to digital cameras and from LAN adapters to CD-R burners.

Don Gammeter, marketing communications manager with Epson Canada ([www.epson.ca](http://www.epson.ca)) notes that the company's cheapest color printer, selling for \$69, is a USB-only device.

The problem with USB 1.1 is that it's just not quite that much, with a "raw" speed of 12 Mbps (megabits per second), which must be shared between all the attached peripherals.

Bellin Components ([www.bellin.com](http://www.bellin.com)) has addressed this issue to some extent with its USB 4 Port PCI Card with QuadFire Technology (US49985), which provides four independent USB channels, all capable of operating simultaneously at the full 12 Mbps capacity. This looks like a great



access solution for anyone using numerous USB devices.

**USB 2.0 offers a data rate of 480 Mbps, making it about 40 times faster than USB 1.1.**

However, the ultimate solution is a new specification: USB 3.0, which was officially announced back in April 2006 with explicit support from Microsoft ([www.microsoft.com](http://www.microsoft.com)), Compaq ([www.compaq.com](http://www.compaq.com)), Hewlett-Packard ([www.hp.com](http://www.hp.com)), Intel ([www.intel.com](http://www.intel.com)), Philips ([www.philips.com](http://www.philips.com)), and NEC ([www.nec.com](http://www.nec.com)). USB 3.0 offers a data rate of 480 Mbps, making it about 40 times faster than USB 1.1.

Equally important, the specification transfer rate jumps from about 1 Mbps to 24 Mbps. That's the speed available for non-critical information, such as streaming audio or video.

USB 2.0 has been available since early this year, at the dawn of PCI upgrade cards. However, adoption was somewhat delayed as everyone waited for Microsoft to ship its Windows drivers, and companies such as Omega Micro ([www.omega-micro.com](http://www.omega-micro.com)) and Adaptec became impatient

enough to throw up their own drivers. Bellin was also pursuing a solution by the end of summer.

Microsoft cited the lack of USB 2.0 drivers for testing as the reason for the delay. However, beta drivers were being handed out in August, and final drivers should be available by the time this article appears in print.

Microsoft has stated that it won't be supporting USB 3.0 on versions of Windows prior to Windows 8. However, card vendors are expected to fill the void, so you should, ultimately, be able to run USB 2.0 on any system that now handles USB 1.1.

Jason Zilles, technology initiatives manager at Intel ([www.intel.com](http://www.intel.com)) and current chair man of the USB Implementers Forum, reports that all Intel motherboards since early this year have had space for a USB 2.0 chip, although the first boards with the chip in place probably won't actually appear until late this year. More significantly, Intel intends to incorporate USB 3.0 into its own basic chipset by 2007.

Peripheral devices supporting USB 3.0 have been trickling slowly into the market. In May, QPS Inc. ([www.qps.com](http://www.qps.com)) announced the Qier USB 2.0 Data32

external CD-RW drive. By the summer, Maxtor Corp. ([www.maxtor.com](http://www.maxtor.com)) had an external 40 GB hard drive. And the new flying-squirrel scanner from Epson Canada, the Perfection 4450, should be shipping in October using USB 2.0 (and IEEE 1394) to deliver images with resolutions of up to 2,400x1,800 dots per inch.

**The nomenclature has been amended, with USB 1.1 now officially referred to as USB Basic Speed, while the new USB 2.0 becomes USB Hi-Speed.**

Although the shift from USB 1.1 to USB 2.0 looks like a no-brainer, there is some potential for confusion during the transition. The USB Implementers Forum has taken steps to forestall this. The nomenclature has been amended, with USB 1.1 now officially referred to as USB Basic Speed, while the new USB 2.0 becomes USB Hi-Speed.

Also, there are now distinct logos for the two standards. USB 2.0 being distinguished by a red flash bearing the words Hi-Speed. Use of these logos will require compliance testing, which should help the side effect of eliminating the occasional glitches seen with USB 1.1, such as having one device disappear when you plug another one in.

There are several technical issues that must be taken care of before the transition. First, USB 1.1 devices will work on USB 2.0 ports; however, they won't see any performance benefit. Secondly, while USB 1.1 cables should work just fine with USB 2.0, more existing cables are not really up to the original standard. (This may be one reason all USB 2.0 adapters currently seem to include a cable.) And third, while USB 2.0 devices should work with USB 1.1 hubs, they will do so only at the old speed.

Finally, as Mark Freeman, product manager at Belkin Components, points out, USB 2.0 does pose some new design challenges. "The high-speed interfaces it's easy to mess up the circuit board," he explains. So it might be worth working with the board manufacturer, or least until the technology has a chance to mature.

## FireWire / IEEE 1394 / iLink

IEEE 1394 is an interface that's been waiting quite a while for its shot at the top.

*Continued on page 26*

# Explosive Color Performance



## Figure 1.3. Composite illustration

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### Appendix B3: Compliance Requirements

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64-591280 BT, 2000A, 2nd edn, 1999

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**Connectivity state of the union**

*Continued from page 36*  
 ture, but which may now end up being vilified on the desktop by USB 2.0. However, strong support from consumer electronics manufacturers seems to guarantee that the standard will become

increasingly significant.

Graduation over the name certainly doesn't help. The technology was originally developed by Apple (seeapple) under the name FireWire, but then released as a more general standard by the IEEE (Institute of Electrical and Electronics

Engineers Inc.). Meanwhile, Sony adopted it under the name iLink—a name that has, reportedly, become popular in Japan.

Confusion and overlap with USB 2.0 is a more serious issue. Both standards allow plug-and-play with hot-pluggable connection and disconnection of peripherals

(i.e., without powering anything down when adding a new device). Both allow data-chaining of multiple devices on a single port.

Digital video is the one key desktop application that's likely to stay with IEEE 1394.

Until about two years ago, USB was pitched as a low-speed, low-cost connection, and it was widely believed that IEEE 1394 would dominate where higher throughput was required. However, the USB Implementers Forum endorsed USB 2.0 with specs that clearly overlap those of IEEE 1394.

Digital video is the one key desktop application that's likely to stay with IEEE 1394. The interface is said to be more efficient at moving large volumes of data while placing less load on your computer's CPU. Also, it can connect directly port-to-port, with no computer in the loop. And, most importantly, the specs consider manufacturers' needs like it.

The performance advantage seems to be real, but opinions vary as to its significance. For example, Adaptec's Scheer confirms that USB 2.0 will probably be faster when accessing a single disk drive, but that for two or more drives, "FireWire blows USB 2.0 away."

However, Joba Hunter, product manager for personal storage products at Maxtor Corp., doesn't stress as strongly, stating that "there's no noticeable difference in use."

IEEE 1394 boosters also suggest that USB 2.0 places a much heavier load on the computer's CPU. However, Intel's Justin Zoller dismisses this view, stating that USB 2.0 won't consume more than about 10 percent of the processor's capacity. "With today's processors it's not an issue," he says.

In any case, while IEEE 1394 is being strongly supported by the consumer electronics industry, especially for applications such as digital video, there's no shortage of IEEE 1394 desktop peripherals. You'll find hard drives from major makers, such as Maxtor, seagate and printers from Epson, and cards of optical drives, including CD-RW, DVD and DVD-RAM types. (It's interesting to note that Microsoft already supports booting of Windows 2000 and XP from IEEE 1394 drives.)

And while USB is on practically every PC (and Mac) motherboard, IEEE 1394 is making headway there too. For example, ADPtek Inc. (seeadp) has several motherboards with IEEE 1394 built in, including the AL394F 1394, and ASUS/OK Computer Inc. (seeasus) has the P3B-1394 with a Texas Instruments 1394 chip on board. Of course, there are also PCI-based IEEE 1394 cards from numerous

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## Hands On

Lab Test • Hardware Evaluations • Software &amp; CD-ROM Reviews

# Office suite slugfest 2002

By Jacques Surveiller

No doubt about it, this is a David and Goliath story with an interesting twist. Goliath owns a part of David—Microsoft purchased a 20 percent stake in Cael last summer, which in turn gives the Microsoft company directly for half of Cael's business.

Corel's WordPerfect Office suite brought in revenues of approximately US\$75 million in 2000, while Microsoft Office sales were close to US\$9 billion. So, Corel's product is much closer to parity in features and functionality than the revenues would indicate. Don't miss competing. Corel WordPerfect Office 2000 may very well grab a sweet spot in the office productivity category, thanks to its own mythical nine software networks.



Office XP  
Silver Edition

The first activation occurs on installation, with a 30-character code that allows the user to run the product for a grace period of 30 days or 30 times. After that, the program in the suite will work in read-only mode until the user obtains a second and final 30-character activation key, either online or by using a toll-free phone call. Users need to supply the 30-digit product key, their name, and the type of the computer. Office 2003 has been installed as before they are, locally in business.

Many corporate and organizational users of OfficeXP will not have to worry about all these activation details because most of their versions of OfficeXP will be run from the server side which will spare them the activation details. However, their organizations will be subject to some restrictions.

## Exploring the new offerings from Corel and Microsoft

or shock as Microsoft has raised prices for all its software products to corporate buyers by a rate well above that of inflation.

Office XP but single, rather than two-step, extension. Revised manuals and Perfect Page™ are available for printing, starting, firm entry to use and refresh knowledge of how to use.

Plus, Simpleware core tools (MindFlicker, Quattro Pro, Presentations, Game Central, and Parallel) along with ease of use and new improving Web delivery.

**Cons:** Still no real fix for Web page development, WordPerfect desktop-publishing format still won't, macro problems, and sluggish HTML activation.  
Overall rating: 7.1 out of 10

**Microsoft Office XP**  
 From: Microsoft Corp.  
[www.microsoft.com](http://www.microsoft.com)

Street price: \$639.95 (approx.)  
Out of box: Long but easy install. He carried on, etc.

what. His printed manual but new Tisa Pando help  
 flow. Add new editors and new has added feature.

set of office suites. Integrated into: strongly with its  
classroom. **Blackboard**, **U2L**, **Canvas**, and **Moodle** 2000

**Case:** Start with *Index Power*, a complex rule to

Word doc engine: WYSIWYG, and macro problems.

sluggish. Oil, adoption, price increase, and school bus.

Overall rating: 23 out of 30

Continued on page 3

the first on hand on 1 DC a day

*Continued on page 94*

### PC Accelerator slows system but speeds up Net

**By Dave Chappelle**

No one can argue that Windows is not the most popular PC operating system in the computing world. Most would agree too that it is a complicated system, full of bugs.

SmartAdac PC Acceleration

[illegible]

```
from SmartAids
smartaidc2000.hugomart.net
Pico: free (beta-version: beta2) 1500 MHz (standard
full-version: nat: 1500)
```

Because it tries to be so many things to so many users, it has a lot of features, and hence is often referred to as "bloated."

One way to improve the performance of Windows is to install only the portions you know you are going to use. Another is to install performance-enhancing software, or "acceleration" software.

SmartStor's Software ([www.smartstor.com](http://www.smartstor.com)) asked us to test its product, which the company claims has been used by gamers and PC system hobbyists for some time now. In an attempt to keep things fair, we also ran Disk Cleanup and Defragmenter from the System Tools menu.

On our test system (a 733 MHz PowerPC G4, with ATI R300-based Radeon 128, 128 MB PC 433 RAM, Fujitsu 27 GB ATA 66 hard disk, and a 24x CD-ROM drive, running Windows XP), we ran SuperSpreads 2000 benchmarking software. It scored 144 in the Internet content creation portion of

Continued on page 88

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During the "boom" days of the Internet when anyone with a wild Internet related idea could find them or her self a "millionaire" on paper overnight, we noticed the temptation to sell out our customers and more importantly our values for that last buck. In the last few years we've seen so many of our competitors sell-domain names to get their hands, poor service and owners who would rather drive their franchise around than run their business. Today, we have large ISP's that are buying all people because they can't get back into the market for the millions of dollars they borrowed, and are on the verge of financial collapse. We have ISP's that have come back from the dead only to die again in a few short months, and we have ISP's that are just simply closing their doors and walking away leaving their customers stranded. In the state of all this chaos, you do have a stable alternative. In fact, we've had the same owner and management team since our inception 7 years ago.

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# PC Accelerator slowed system

Continued from page 28  
the test and 126 in office productivity, for an overall Sysmark 2000 rating of 131.

Then we downloaded a 24.1 MB file consisting of a trial version of Macromedia Dreamweaver. Our download speed averaged 132 Kbps, and total download time

was 4:52 min.

We downloaded the PC Accelerator fairly quickly from the site. The program installs easily, but minor annoyances included a window that opens and sits on top of the desktop, from the toolbar a blank window is visible, but this cannot be used to right-click and close the application like most Windows

applications. As well, every time it is started, it counted down five seconds while waiting for the user to click on the Purchase PC Accelerator Full Version Now button.

When it first opens, there appears to be an overwhelming number of possible adjustments that can be made to a system. The seven tabs under which users can cus-

tomize system settings are Internet, Graphics, Security, System, Advanced, Misc, and More.

Thankfully, many of the adjustments are explained in the Help section, which is also available from the Program group in the Windows Start menu. Not all adjustments are available in the trial version we tested.

We checked all the boxes recommended for improving Windows performance and Internet connectivity that were open for us in our test version.

We installed PC Accelerator software, and ran—or more accurately, attempted to run—Sysmark 2000 again. Unfortunately, as long as the acceleration software was installed, Sysmark 2000 refused to run its image-m manipulation program called Graphic Reality. After many attempts, we relinquished Graphic Reality from the run, which prevented us from receiving a true Sysmark 2000 rating.

To get some indication of system performance, we decided to average the first five runs of the 13 remaining programs, and compare those. (Please note: This is not how Sysmark 2000 benchmarking software is to be run, nor scored. This is only for our readers' amusement and information. Higher ratings are better.)

| Test application         | Before | After |
|--------------------------|--------|-------|
| Copy 4                   | 157    | 156   |
| Copy 2000                | 160    | 157   |
| Copy 2000                | 176    | 174   |
| Randomly Speaking Part 4 | 150    | 152   |
| Network Connection       | 152    | 154   |
| Photos 4                 | 158    | 164   |
| PhotoShop                | 126    | 125   |
| PowerPoint 2000          | 158    | 171   |
| Printout 2.1             | 158    | 155   |
| Word 2000                | 16     | 16    |
| Windows Media Encoder 4  | 70     | 148   |
| Total                    | 1,478  | 1,583 |
| Average                  | 152    | 154   |

Some possible reasons for our results (including the two separate login times for Symantec EIS), there are only five users on the test system desktop. There are no linked messaging systems. There are no heavy desktop graphics, although there is one small blimp on the desktop. The entire system is kept as clean as possible. Once a program is no longer used it is uninstalled and deleted.

It is possible that on another system, especially one with plenty of desktop icons, the Smart Alec software would improve system performance.

To check for improvements in download speed, we again downloaded Dreamweaver from the Macromedia site. This time our average speed was 131 Kbps, and the entire 24.1 MB file was transferred completely in 4:55 min., a clear improvement.

So, in our tests PC Accelerator slowed down system performance, and sped up Internet download speed. As with all things computing, your results will probably differ.

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**Office suite slingshot 2002**  
Continued from page 28

**How important is price?**

In the version of Microsoft Office good enough to maintain the marketshare established by previous versions of the product, even while maintaining a street

price of at least 50 percent more expensive than its major rivals, Corel WordPerfect Office and Lotus SmartSuite?

Well, let's examine pricing. Although Microsoft does charge a premium list price to consumers, it has, until the recent price spike to corporations, offered steep

discounts to organizational buyers that were at or below component prices. Organizational buyers not only account for 50 to 60 percent of suite purchases, they are very influential in determining what product will be used at home. Users want to be able to share, collaborate, and



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exchange documents with a minimum of fuss—having the same suite at home and at the office makes this easier.

However, a product cannot sustain a position without being competitive on features and reliability. In our last review, we found Microsoft Office 2000 and Corel WordPerfect Office to be substantially equal on baseline features but with Microsoft offering a slightly wider array of extra programs and utilities.

This review is based mainly on the bare bones of Office XP, but from what we have seen, it clearly continues to lead in offering extra program goodies, such as Publisher, language translation services, and optical character recognition (OCR) facilities.

In addition, Microsoft rated slightly better in key niche programs, such as presentation with PowerPoint ( bugs killed an otherwise functionally superior Corel Presentation) and Excel (although, in my assessment, Corel's Quattro Pro spreadsheet was faster and had more formulas and functions).

In the key area of Web development, Microsoft's FrontPage was clearly superior to the Corel add-in product Totolix. And the new Office XP's FrontPage now has no counterpart on Corel's side other than the greatly improved Web output from the individual programs in Corel Office 2002. This might very well be the story of Microsoft Office XP versus quite dominating but always having some advantage relative to its competitors.

### Where is the innovation?

Like last version of Corel WordPerfect Office 2002 and Microsoft Office XP became available in the spring, with final commercial products following later in the spring for Corel and early summer for Microsoft. The interesting contrast is where the companies have put their emphasis on innovation. Microsoft continues to play the bulk of its effort on integrating into its .NET Services and Windows 2000 operating system plus a job of new utilities. Corel has made improvements to its core programs with an eye to serving the Web as well as the desktop. Both vendors continue to add XML to their suites but in a fairly tepid pace considering the rapid developments of XML elsewhere.

However, Corel leads by a wide margin in terms of having XML (and SGML) *Continued on page 37*

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## Office suite slugfest: 2002

Continued from page 24

tools available to not only create XML documents but also the underlying schema for new XML document types.

In their literature, each company responds to a theme for the latest version. Corel is emphasizing the fact that user feedback changed 70 percent of the changes in WordPerfect Office 2003. Microsoft is underlining three themes in Office XP: an enhanced personal experience due to ease of use and greater discoverability; a better collaborative experience with other Office XP users; and a stronger organizational and administrative experience.

This latter point is really targeting system administrators who have to install and maintain anywhere from dozens to thousands of Office XP licenses. Office XP not only helps automate the installation, on Windows 2000 servers, it helps automatically repair any damage done to a client's Office XP installation while quickly updating, or adding new services on an on-demand basis.

WordPerfect Office 2002 increases the usage on-demand loading of servers and some of the recovery capabilities. But the clear innovation in office suites has been in the areas of discoverability plus integration and collaboration.

Discriminability equals positive out of best experience

The Computer Paper has been devoting a lot of attention to the out-of-box experience of products. This indicates how easy it is to install and get started using software or hardware.

But in these days of feature-packed software upgrades, it has taken on a new meaning: how easy it is to remember how to use, especially given all the new features, add-ons, tools, and options. Microsoft calls this *discoverability* and, interestingly,

Carey's water is lowing in this area.

Corel has polished its PerfectOffice, a series of task panes on the left side of the screen that guide users, step by step, through many of the common tasks they need to accomplish in WordPerfect, Quattro Pro, Presentations, or whatever.

PerfectReports are easy to turn-off and-on, and with screen resolutions of 1,024x768—higher now commonly available, the extra space they occupy is no longer a problem. When using any of the Corel WordPerfect Office programs, users get access four types of help that will aid them in being productive no matter what the task.

Say I have forgotten how to make footnotes in a WordPerfect document. Rather than going to the help system, I check out the PerfectExpert. Clicking on the PerfectExpert's footnotes icon quickly helps me with my task. If I then want to format the footnote text, I can right-click in the footnote area for a context-sensitive menu that offers me an option for formatting—this is my second level of help support.

My third level of support is the property toolbar. Every time a user changes the major object they are working on (switching from spreadsheet to a chart in Quattro Pro or fire text to table in WordPerfect, for example) the property bar quickly, and almost unnoticeably, offers a whole new set of buttons and pull-down menus with the most options for the right mouse click button chosen. too

Finally, all else failing, I can click on the Help menu. What Carol has done very well is to spread the help system out across content-sensitive menus, task panes, and property lists. Now, when I suspect the command is somewhere buried in the menu system, I feel much more confident that I will be able to discover quickly where the command or option I need is with WordPerfect's Office

Microsoft has had context-sensitive property toolbars and right mouse click menus in Office and even task panes in its Publisher 2000 and earlier products. But, for whatever reason, it has not delineated these capabilities uniformly across its office suite programs. For example, the property bar in Office XP appears in some windows but not in others.

Office XP offers a new task pane feature and it is certainly a help (just right in the case of coaching task panes, overly helpful in the case of the clipboard task pane, and redundant in the case of the presentation options task pane).

Clearly Office XP task panes lack the experience and polish of the WordPerfect Office PerfectExperts. While I still get lost in Office XP, I rarely lose my way in WordPerfect Office.

Both suites have some unique yet subtle features: in Word, it's the word count pop-up, in WordPerfect it's the spontaneous outline pull-down on the property bar and the back arrow that returns the cursor to each succeeding assertion point. But for overall effectiveness in ease of use and discoverability, the LTR sounds in Corell's offering earn top marks.

### Scale Integration and Work management

In the area of documentation and ease of use, both testers have impressed, with Corel's long history of excellent customer support a distinct advantage. But in the areas of integration and help support the results are decidedly more mixed. State integration has steadily improved (including common menus and toolbar layout, task panes, common spell and grammar checks, and shared graphics), but communications between users and external programs is still quite variable as is the ability to determine needs to the Web and other platforms.

Both Corel packages have earned an A-

tensity by not immediately converting their file formats to XML, with public document type definitions (DTDs). Microsoft has gone part of the way with Visio and Excel, and Corel certainly has the expertise in WordPerfect and Quattro Pro. This failure to convert to XML file formats is one factor in lowering our overall ratings of both suites.

Unfortunately, Web integration is also quite mixed. On the positive side, Office XP offers new SharePoint Team Services, which provide a convenient Internet or Web-based site (it must be on a Windows 2000 server with SharePoint Team service extensions) for sharing not only group Office documents but also group events, discussions, surveys, and other team schedules and information.

These SharePoint sites can be edited as from Page 2001 to provide a distinctive look/style. In addition, Office XP has new functions to SharePoint Portal Server (different from Share Point Team Services), which offers indexing and Office XP, plus other document archiving capabilities. Office XP also has MSN Messenger integration, group schedules, WebDAV archiving, and removing plain text/binary sharing through Outlook and Microsoft Exchange. The downside is that with the notable exception of WebDAV, all of these are proprietary, with sharing/integrations solely across Microsoft servers.

In the area of delivering output to the Web, Word/Perfect Office clearly outshines Office XP. For example, Corel Presentations offers more Web output options than PowerPoint, including large layout choices (thumbnail page control and frame-influenced layout are my favorites). The graphic image types (JPG, GIF, PNG, and Flash SWF), font page styles, with a thumbnail sketch of each to choose from

Continued on page 55

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# Office suite shogfest 2002

Continued from page 37

page size and consistent elements like tabs, numbering, and other features and, in general, very little control over how your presentation will appear online. As well, the *Minion* is reliable and easy to use.

In contrast, Office XP's PowerPoint offers limited control over Web output, with nothing matching Corel Presentations Desktop for Quattro Pro over Excel in Web page output (Excel does, however, have more HTML options), and so through the suite with Corel offering more Web output options and delivering HTML that is shorter and cleaner than its Office XP counterparts.

However, neither suite can match a third-party utility called Click-to-Convert from Internet Software ([www.clicktoconvert.com](http://www.clicktoconvert.com)), which produces consistently high-quality HTML output, proving to be a pricier option in any Windows program.

## Collaboration

Collaboration has always been important to organizations. But now, with more people working in spontaneous, project-associated teams, the need is even greater. As we have seen, Microsoft provides links to SharePoint Team Server and SharePoint Server. There can also find similar services for free or for a fee online.

Microsoft also offers tight links to

Exchange, including messaging, public calendaring, and workflows. In the latter two cases, online is recommended as those services are subject to upcoming HTTP and other Web Services changes. However, by pointing the infrastructure for a meeting or a Web discussion right into Office XP's menus and toolbars, Microsoft has certainly moved a step ahead in easing collaboration and sharing.

But both suites offer a fairly robust set of collaboration services. Both allow users to share a spreadsheet, document, or data base table (but not databases) for collaborative review, for comparing files or editing a common file.

These review facilities include having a view list of who can access the document and with what privileges. The owner of the document can review all the changes and has several options for accepting and rejecting proposed changes. Microsoft tools do a better job of displaying conflicts and this is useful along with its team management and online collaboration services.

Both vendors offer their own tools and books for third-party archiving, version control, and content management programs. But in this arena, despite its proprietary lineage, Office XP offers more terms and group collaboration features and convenience than Corel Office X.

**Next:** Detailed symptoms of the suite modules

# How necessary is CorelDraw Essentials?

By Jacques Savoyeur

## CorelDraw Essentials

From Corel Corp.

[www.corel.com](http://www.corel.com)

Street Price: \$19

CorelDraw Essentials is a mixed message. On one hand, users are getting nearly all the goods from the CorelDraw Suite (but based on Version 8, one generation behind the flagship product, CorelDraw X3).

Corel has a deserved reputation of making its graphics programs easy to learn and easy to use. It has protected rack associations as custom-sensitive right mouse clicks and a property bar that changes the instant you select a new tool. Corel's dockable, flexible, and



Added dialogues have received the same amount of battery treatment by its

Continued on page 40

Owner: Using CorelDraw and PhotoPaint 8 is fine, Corel has created a program aimed at meeting the growing needs of digital artists and Web developers for a price that is one-third of the best deal price of its CorelDraw X3 mainline. Out of the box, Corel Essentials installs with more than 100, and no what? A good-looking manual often getting started exercises for both CorelDraw and PhotoPaint but they are somewhat bland. Few other aids for novices.

Overall: The good news is that Essentials has nearly all the power and usability of CorelDraw and PhotoPaint 8. The bad news is that, in contrast to Adobe Photoshop Elements, Corel has provided it to be able to make their very accomplished programs more accessible to new digital artists and graphics users. Thus, Essentials is a bargain for the graphics savvy, but for brand new users Photoshop Elements or iPhoto Photo Impact might be a better choice. They have few features, but provide aids to learning and ease of use.

Overall rating: 4.1 out of 5

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# How necessary is Essentials?

Continued from page M

competition.

And the thoughtfulness of the menu and toolbar layouts make working with Corel graphic programs a very productive exercise. Time and again we've given Corel top marks for ease of use.

But, on the other hand, Corel has made only small efforts to integrate the vector/illustration features of CorelDraw with the point/illustration photo features of Corel PhotoPaint. The two programs stand alone and essentially exchange images at the file import level. In addition, Corel PhotoPaint has the path command to draw vector curves.

For the legion of new digital camera users and graphic novices, CorelDraw Essentials doesn't go as far to unlock all the goodies available.

Covered this with Adobe's new Photoshop Elements or Mac's Point Shop Pro (also priced around \$150), which both have vector drawing commands as well as vector shape creation tools built right into their photo browsing programs.

And in addition to having vector shapes, both programs make it easy to



enhance the shapes or make them interact with underlying or overlaying bitmap objects. This integration of vector and bitmap graphics, so that use is nearly transparent to graphic designers and photo manipulators alike, is a major trend in 2D graphics.

Unfortunately, Corel continues to dabble with this, so users cannot get the neat custom shapes or stylings of vectors as easily as users of Adobe or Mac products can.

Corel is really on a second course. Adobe, Inc., and Ulead are starting to beat Corel at its own game: ease of learning and ease of use. Corel pioneered the field with raster and much features. Corel's Paradoxicality has been limited with task panes in the new version of Microsoft

Office XP; for example Adobe Photoshop Elements also illustrates that, guiding new users into using the program effectively with its two new helper dialogues, Hints and Recaps.

CorelDraw Essentials has no such support tools. The closest are some of the automated help examples and the Help topics and Quick Start But, unlike Adobe's Hints, Corel's hints are not context sensitive or always open in task panes and windows. For the legion of new digital camera users and graphic novices, CorelDraw Essentials doesn't go as far to unlock all the goodies available.

## What's in CorelDraw Essentials

But what is a set of goodies, Corel Essentials is ahead of all the other and price programs for novices. It has all of the making, brush, and layer/object tools of Corel PhotoPaint and all of the drawing, transformation, and text-manipulation tools of CorelDraw—albeit one version behind.

In addition, users get two powerful utilities in Corel Capture and CorelDraw Color Lib, the often features of which are greater for digital camera and Web users who

have to manage hundreds of images. CorelDraw Essentials users are not short-changed on features. The major missing pieces are VBA macro support and the latest Corel Draw 10 feature set.

## Summary

Corel Essentials is distinctly a good new/bad news story that, fortunately, is weighed more heavily towards the good news.

On the good side, users have access to almost all of the features of CorelDraw 9 and PhotoPaint 9, the implementation benefits from bug fixes (usually only a few) and noticeably faster performance and the combination of better speed, power of a full graphics menu, and a price of \$150 makes it good value.

On the bad side, new digital camera and Web graphics users won't find the learning tools that other software vendors are implementing. But remember, both CorelDraw and PhotoPaint start from a position of strength, being the core of the top-of-the-line programs to date.

In sum, if you are a new graphics user looking for good training wheels, you might want to try products from Adobe, Mac, or Corel.

If you don't need hand-holding, consider CorelDraw Essentials to be a bargain in 2D graphics processing. □

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# Windows XP preview

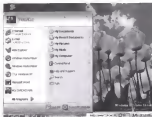
## Part 2: Features and functions highlights

By Maarten Heijmans

A delay of Microsoft hype is about to descend upon us. It will consist primarily of abstract and conceptual notions, using terms like "eXtreme" and phrases like "enhance the core dependability".

I predict that a cold run of central despair will follow the upmost information in the Windows XP affirmative copy-benching. The complaints will focus on various parts of Microsoft's world domination strategy, like Product Activation. This copy protection scheme will be widely despised and ways to avoid it will be incessantly available.

Another round of criticism will focus



Windows XP start dialog.

on the bundled applications, like Microsoft, MiniPlayer, and Messenger, that are installed by default (even in the business-oriented Pro version) and can't be uninstalled gracefully

The intense commercialization of Windows, seemingly designed primarily to provide ultraprofits to Microsoft, is also sure to irritate many.

In spite of these polarized views, many will not be able to resist the allure of Windows XP. It's more powerful than the Windows 9x code it supersedes, more reliable, has several great new features and also looks pretty nice. The only thing missing is that new car smell. (It's not the only thing.)

In this second installment of *The Computer Paper's* Windows XP Preview, we'll take a hands-on look at the changes in functionality, concentrating on what's new and what's different. My con-

Continued on page 64

## Processor Wars

# Intel hits 2 GHz

By Sean Connolly

The race to the 1 GHz mark was a hot contest, with both Intel ([www.intel.com](http://www.intel.com)) and Advanced Micro Devices ([www.amd.com](http://www.amd.com)) gunning for the prize. AMD eventually squeaked past Intel to be first over the line, but then settled back into a slower pace, with serious speed increases along the way.

By comparison, Intel has been going full gas with its Pentium 4 line, heading to 1.5 GHz, 1.7 GHz, 1.8 GHz, and now hitting a whopping 2 GHz. At the time of testing, AMD was still topping out at 1.4 GHz with its desktop Athlon processor.

The question at the minds of many, however, is one of perfor-

mance even with a 1.4 GHz processor, the Athlon was doing an adequate job of meeting the performance of the fastest Pentium 4 chips available. That may be one of the reasons that the hype around breaking the 2 GHz barrier is far more low-key.

The 2 GHz Pentium 4 will use the 65-nanometer manufacturing process used for previous models in the Pentium 4 line. The 2 GHz version of the Pentium 4 makes use of the microPGA 423 socket, or Socket 478. Compared to the older Socket 423 (also called KPGA 423), this socket features 55 additional pins—enough for a smaller design—which allow more power and grounding to achieve even faster speeds down the road.

Continued on page 50

## Apple News

# System 9.2.1, one of the last Classic updates

By Justin Sizemore

In late August, Apple quietly released System 9.2.1 on its Web site as a downloadable update. The update docks in at a rather large 82 MB, and for those with dial-up connections it may just be too large a download. Over high-speed DSL or cable connections however, the download takes about 10 to 15 minutes. If you don't have the time or ability to download it, Apple will let you 9.2.1 on CD for \$10.95 plus shipping and handling.

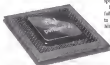
The update doesn't add a lot in the way of features but it does improve stability when used as the Classic layer in OS X 10.0.6. It also makes the largest cleanup Apple has done in years, with almost every extension updated, and the networking in particular has been rewritten for increased stability.

The update also includes new AIX and iFixes drivers that improve 3D performance on those Classic Mac OS 9.2.1 users. The first 9.2 revision to require a G3 processor or better to run. Just as 8.5 was the first OS to require a PowerPC (much to the dismay of Quads and Centris users), 9.2.1 marks the end of the line for some popular models, such as the P166/6500 series. Older Macs that have been upgraded to a G3 but did not ship with one are technically barred from running 9.2.1, but some third parties plan to release patches for their upgrade cards that will allow the update to install. We recommend that the update is most important to those with newer machines, or those running OS X.

## Apple drops Titanium PowerBook prices



Continued on page 54





# Windows XP preview

Continued from page 42

events are based on Release Candidate 2 (RC2), the most recent build available at the time of writing.

The final article in this series will cover upgrading, from system requirements and setup to customising your configuration. By the time Windows XP is released on Oct. 25, you'll have all the information you need to make your decision.

## A new pretty face

The first change you will notice is the new design or "facelift new look" icons, win-



Folder view in Windows XP.

dow borders and buttons in the new XP. These all look much more three-dimensional. You won't mistake this for any previous version of Windows.

## There is a dramatic change in the model of what the Start Menu represents and how it works.

As these visual enhancements require more screen real estate and colour depth, the minimum resolution is now 800x600, and the minimum colour depth is 16-bit.

The new background images are visually spectacular. As with most of the changes, people who are clumsy or uncomfortable can return to the previous design with minimal effort. The three selections link promises to provide more themes, colour, but some were available during our testing.

In some cases, with the Start Menu for example, it's

hard to separate the design update from the new functionality. There is a dramatic change in the model of what the Start Menu represents and how it works. Since the introduction of the Start Menu in Windows 95, I've used it for primarily for the organising list of installed software and the list of recently used documents.

The new Start Menu consists of two columns. On the left, beneath the conspicuous Internet Explorer and Outlook Express launch buttons, are shortcuts to the last five applications you used. At the bottom of this column, is the All Programs button, which cascades out to present the familiar list of installed software.

In the right column are links that open the default document storage folders like My Favorites, My Documents and My Computer. XP Pro users will find several new documents, but XP Home users will have to dig into the properties to add this



Windows Media Player interface in Windows XP.

feature. Control Panel, Help and Search links are at the bottom of the right column. Shut Down and Log Off are buttons on the bottom border of the Start Menu (and that's a good thing).

If you feel that your computer looks like a disconnected machine, Windows XP will make a look like charmed and more organized. By default the only desktop icon is the Recycle Bin. If the software you install adds icons to the desktop, it will be automatically removed if you don't use it.

A new grouping feature on the taskbar

Continued on page 48

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#### Windows XP preview

Continued from page 46  
equalizes the multiple Word documents or Internet Explorer windows you may have open. However, the cleanup isn't always useful. For example, in the XP Command Panel you must navigate through

a level of grouping icons before getting to the real controls. Of course, you can resort to the classic control panel functionality. Before you do, be sure to check out some of the sounds that simplify Windows' configuration tasks. Interestingly, although the My

Computer icon doesn't appear on the desktop with the new Start Menu, if you revert to the classic design, it returns.

At the other end of the toolbar from the Start Menu, the System Tray has been assumed the Notification area. As part of the clutter-reducing initiative, only active

messages will appear. You'll see icons to let you know the status of your notebook battery, or to let you know you have new e-mail, or have received a Messenger message. These settings are customizable on a per icon basis, so you can have the familiar volume control always present if you want, but it is no longer there by default.

Folder Explorer windows also have new organizational capabilities. New customized folder types, like Photo Albums, Music Albums, and Videos, each contain specialized features. Folders display thumbnails of the files in the folder. If the folder contains music files, a thumbnail of the CD cover art is displayed.

The View menu's Small Icons option has been replaced by Tile. This worthwhile update combines a representational icon with the file information seen in Details view.

Folder Explorer windows have a new task pane providing access to frequently used capabilities that are particular to the files in the folder.

A new Show In Groups feature organizes the files according to the selecting sorting order. Each group has its own way to split heading like Today and Earlier this Week (date order), Movie File (MPRG) as file type order, or Willflows or R2M when sorted by artist. These are also many more column options in the Details view. Folders containing images have a Filmstrip View to display a selected image at large size and thumbnails across the bottom, resembling a filmstrip, for navigation.

Folder Explorer windows have a new task pane providing access to frequently used capabilities that are particular to the files in the folder. For example, a folder with music files ripped from a CD has one-click task links to play all files, copy the files to CD, or shop for more CDs. Many of the contextual capabilities available from the right-click menu are new also in the task pane.

One of the most significant new abilities is the integrated CD recording utility. After you have ripped an audio CD onto your drive, go to the folder containing the files. If you have CD recording hardware in your system, you simply click the Copy All Icons To Audio CD task link, insert a blank disc, click record, and a few minutes later your new copy pops out. Isn't it interesting how copying is less of an issue when it's not Microsoft's intellectual

Continued on page 48

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# Windows XP preview

Continued from page 46  
property that's involved?)

It's equally easy to copy your own documents or other files. Right-click to send folders or files to a temporary folder, and then get a blank CD in the drive. The tem-

porary folder opens and a wizard walks you through the CD-writing process. I'm certain that there are still advanced users who will find a need for Nero or Easy CD Creator, but most of us won't.

Even though the new Windows Media Player for XP (WM4PR) loads too slowly

and is too full of ads to have my analog file support, there is a lot to like. It rips CDs into WMA format, downloads track info, and is a generally functional media driver. Since it automatically creates folders, adds album art thumbnails and generally explores music files, I'm tempted

to start digitizing my considerable CD collection.

WM4PR does not include a DVD decoder (you will need to purchase a DVD decoder pack from a third-party software vendor), but it does integrate DVD playback functionality for your DVD drive. When a DVD is popped in, cover art and movie info, including the names of the chapters, is downloaded. There's no DVD ripping capability.

Windows XP does not include the NetTV for Windows client that was in Windows 98 and Windows Me. I expect that functionality to eventually appear in the Media Player.

If you share your computer with other users, you'll want to check out the multi-user functions. Used with the NTFS file system, you'll be able to keep your files and folders private from other users of the same computer. Windows XP starts with the login screen, and multiple users can have active sessions, making switching users as easy as switching tasks.

There are many differences in system configuration, functions, and even upgrading from Windows 98 will suffer through some frustrations while they wait out the changes.

For those learning how to add and configure hardware in Windows XP to be a challenge. It's hoping that the next release of Windows will continue the easy properties, settings, and configuration options. Even though most items will be found in the Control Panel, for others you must right-click My Computer and select the "manage" and "properties" links.

Many settings require navigation through multiple dialogues, tabs, and buttons that say "advanced." There are still multiple places to change most settings, and similar items may be in widely separated dialogue boxes.

I've given you a quick tour of the highlights, but not around the lots more to discover in Windows XP. □

Walter is the editor of *Master Windows* (McGraw-Hill) and has been reviewing XP since September 2000. He can be reached at [walter@tdn.com](mailto:walter@tdn.com).

## Real Help

As a young kid? Paula started Saturday night's College Patch-knit? Yes, we have! Let's see! Before the last of the month of the 20th century in the United States. Now, on display are many of the items that inspired the design and behavior for very short periods of time. Besides the fashion and the behavior, the site offers up the activities and events of our collective past, such as talking to plants and toys. <http://www.fish.com>

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# Intel® M3 3 GHz

Continued from page 30  
on Aug. 23. This date comes hot on the heels of a July 14 announcement that the company's Dresden fabrication plant had shipped 10 million Athlon processor dies. With an industry that is often very fickle

in its tastes, both indications are worth noting, especially considering the fact that before the introduction of the Athlon, some people were finding it hard to take AMD seriously as a potential rival to Intel's industry dominance.

AMD is celebrating the second anniversary of the Athlon with the introduction of a newer and faster version of the mobile Athlon 4. The new 1.3 GHz processor, along with AMD's 800-MHz mobile Duron, will be integrated into Compaq's Presario 1200 notebook line.

The 1.3 GHz Athlon 4 is being introduced at a price of US\$445 each (in 1,000-unit quantities), and the 800-MHz mobile Duron will be US\$130 each (also in 1,000-unit quantities).

## Duron Duron hits 1 GHz

In addition to the new offerings to the mobile world, AMD has announced a third Duron for the desktop, which marks the first time a budget-oriented consumer processor has cracked the 1 GHz barrier.

Although the processor fits into the same socket as the other Athlon and Duron models, the 1 GHz Duron is built around a new core, known as Morgan. The Morgan core features new exclusive die enhancements aimed at users interested in digital photography, music and Internet multimedia, and supports the Windows XP operating system. The processor will ship at a price of US\$85 each (in 1,000-unit quantities). □

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## Let your clone do the talking



Matrix Graphics ([www.matrixcorp.com](http://www.matrixcorp.com)) has released the Millennium G550, a graphics card that comes with software for creating a realistic 3D "clone" of a user's head, which they can use as an avatar to communicate online with family and friends.

Users create their digital clone with Digitalk, which creates a 3D replica of an individual's head from just two photographs. Also bundled with the Millennium G550 is iFlick's headtune



for real-time online communications, and Matrix Virtual Presenter for Microsoft PowerPoint, which allows the user to create a PowerPoint slideshow accompanied by his or her own photo-realistic 3D head.

The recommended system requirements for the Millennium G550 are a 450-MHz processor, 128 MB RAM, a 5400s modem, Internet Explorer 5.5, and a microphone. The Millennium G550 has a suggested price of US\$125.

—J.P. Delfino







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# SoftQuad fits Corel's master plan

## XML central to cross-media publishing vision

By Sam Venetis

Corel Corp. (corel.com) is investing in its future. Last year it acquired a well-known set of graphics tools—Painter, Xa's Power Tools, and Bryce 3D—from Cupertino, Calif.-based MetaCreations Corp. In July, it picked up Dallas Tex.-based Micrografx Inc. in a stock swap, then in August announced plans to acquire Toronto-based SoftQuad Software Ltd.

"What people have today are multiple production lines. They are doing a Web presentation, a paper presentation or going from text to audio output. And the problem is guaranteeing the quality of the content when you go from one medium to another."

The acquisitions are part of the long-term strategy Corel's chief executive and president, Derek Harvey, outlined for investors and journalists in January. The three phases of the plan include upgrading its product line (CorelDraw and WordPerfect) and releasing new versions of Corel KnockOut, Corel Painter, Bryce and Xa's, expanding the scope and flexibility of the products with key acquisitions, and seeking out new acquisitions and markets in which the company can leverage its strength in graphics and design.

The strategy appears to be working, as

Corel's second quarter results for 2001 compare favorably to those of 2000. Revenues this year represent an 11 percent increase over revenues Corel posted for its first fiscal quarter of 2001.

### Cross-media publishing

In describing the acquisition phase of the strategy, Harvey says, "what we wanted to do was not only have our applications running on the Web, but also to give our customers the ability to create content that would fit on the Web."

"While we have added more Internet support to our applications so you can publish documents on the Web, what was lacking was the ability to publish those documents on the Web in such a way that a would be optimized for the Web."

Corel calls this cross-media publishing: reporting content created in any one of Corel's programs to other formats without losing any richness or complexity. This means the same content can be viewed on everything from a common Web browser on a laptop to a Palm handheld, BlackBerry, Windows CE-based device, or Web-enabled cellular phone.

At the same time, the content can also be interactive, allowing users to navigate within Web pages and documents. This would be especially welcome for content creators looking to push interactive maps and catalogs onto smart, handheld devices.

Corel says the best way to achieve this is to enable Corel's products with XML (extensible markup language). The SoftQuad acquisition gives Corel the XML expertise it needs. SoftQuad, which gained prominence for its HTML editor HotMetal, has become one of the best known developers of XML tools. Its



Kevin Restivo, Corel chief executive officer

XML applications suite has won a number of awards.

"The best piece of technology for sharing information over the Web is XML," Harvey adds. "And since WebPerfect is an XML [editor] and Draw can understand XML, it was a logical step to go further into the XML space and the XML editing market. And SoftQuad fit well into this strategy."

Kevin Restivo, an analyst with Toronto-based International Data Corp. (IDC) and Corel watcher, says the SoftQuad acquisition fits well with Corel's plans for long-term growth and acquiring new markets, such as graphics and content creation tools for the enterprise customer.

"I did look carefully at the SoftQuad acquisition and I think it is a great fit and it is an important move for them," says Bill Kline, an analyst with Standard & Poor's-based Gartner Group Inc. "What people have today are multiple production lines. They are doing a Web presentation, a paper presentation or going from text to audio output. And the problem is guaranteeing the quality of the content when you go from one medium to another. Having tools where users can create the look and feel they want and then take that look and feel over to a new media is going to be very important."

Corel's earlier acquisition of Micrografx Inc. also fits into this strategy. Micrografx's strength in the graphics market complements Corel's, and as Corel pointed out when it announced the acquisition, it intends to devote more resources to Micrografx's enterprise process management division, thereby building another tool for its cross-media publishing vision.

But Corel is not the only one looking at this new Web-enabled publishing and content delivery market. Adobe Systems (adobe.com) has for some time been promoting its concept of network publishing, an idea similar to Corel's cross-media publishing.

IDC's Restivo says Adobe is the one to watch. Corel is going to have to face its market.

Kevin Dussal, managing director for Adobe Systems Inc.'s Toronto-based Canadian operations, says Adobe's popular design and content creation tools are already Web-enabled and capable of producing content that can be exported to any kind of Web-enabled device.

Continued on page 22

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## NEW & NOTABLE

### SoftQuad Win-Cord's master plan

Continued from page 34

And Adobe recently announced a PDF reader for the Palm OS. The company believes its popular Acrobat PDF creator and reader software is the platform that can deliver rich media and content to Web-enabled devices.

But Cord's Ranney says his company has no advantage because the content is not using Cord's products as platform sponsors and does not require something

like Acrobat Reader to be viewed.

Adobe's David Cooney: "We refer to our products as a publishing ecosystem and with products like Acrobat, Photoshop, Illustrator, InDesign and GoLive, we have a complete [publishing] solution. And a number of those products are the central items for designers both in print and for the Web. We don't see Cord as a competitor because we already have all the tools that work together." □

### Lotus LearningSpace 5.0 debuts

IBM Webtop Solutions (www.ibm.com/webtop) has announced the availability of Lotus LearningSpace 5.0, its e-learning platform.

Lotus LearningSpace is a Web-based system for blended and collaborative learning. This new version offers enhanced real-time collaboration and increased support for Lotus Notes and Lotus Domino users. It also allows users to incorporate new on-demand course material from content vendors, including SmartFocus, Skillsoft, and Thompson Corp.'s NECT. Custom content and curriculum development is also available from IBM Webtop Solutions.

According to IBM, key features of LearningSpace 5.0 include redesigned, customizable interfaces with more persuasive, collaborative tools so students can easily chat, share documents, and send email to classmates and instructors; the ability to record and playback live sessions; and the option for teach-out sessions during live virtual classes.

Administrators can set up automatic email notifications for such events as enrollment or server maintenance, and are able to take advantage of improvements in the newer versions of Microsoft MSN, Oracle, and DB2.

It will be available in two versions: the Core Module, which supports delivery, tracking, and management of online, self-paced learning and provides the infrastructure to manage learning initiatives of any size, and the Collaboration Module, which extends the Core Module with discussions, live real-time virtual classes and built-in awareness and instant messaging.

Lotus LearningSpace 5.0 is expected to be available for download by press time. Pricing is available from the Passport Advantage II Program (www.ibm.com/passport).

-TIP Staff

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# Tech Enterprise

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## Moving on up

ASPs offer small businesses the IT toolsets enjoyed by larger enterprises without the high capital and maintenance costs

By Tom Venetis

It's taking a while for the application service provider (ASP) concept to catch on with small businesses, even though the estimate underlying the ASP model is straightforward and compelling.

Most small businesses understand the economy and convenience of "leasing out" for a range of services, like quick printing, photo copying, and bulk mailing. An ASP extends that way of doing business into the information technology realm.

Larger companies already recognize the benefits of ASPs, and most of the prominent ASPs have succeeded by offering large-scale solutions for customer relationship management (CRM) or enterprise resource planning (ERP).

Over the last year or so, however, many smaller Canadian businesses have started to take a liking to ASPs, and ASPs, in turn, have started to focus on how they can better serve smaller operations.

Jon Gibb, an associate analyst with the business-to-business research group at New York-based Jupiter Media Metrics Inc. (jupm.com), has seen how the ASP

market has become increasingly aware of the small business sector over the last 12 months or so.

"First-generation applications were allowing small businesses to get online, develop a Web page, and build transactional capabilities," Gibb says. "Now you have a second generation of applications being offered by small business ASPs that are much more aimed at working with the natural processes of a business to help that business develop faster and to better compete with larger players."

"Smaller companies are discovering that they can get the solutions they need without having to make the huge investments in buying the actual solution."

According to a recent Jupiter Media Metrics study, Profiting from Small Business, many of these ASPs are offering

(Continued on page 10)

## Retailers urged to look beyond online profits

**NEW YORK**—Figures released in late August show that 69 percent of brick-and-mortar retailers in the U.S. are judging their online success purely in terms of their sales and profits, and are ignoring other non-financial aspects of their online presence.

The research, from Jupiter Media Metrics (jupm.com), concludes that the actual return on investment (ROI) for many "conventional" retailers choosing to advertise their presence online is up to two-thirds higher than they actually believe.

The report confirms figures released by the research firm's European operation, Jupiter MMR, in early August, which found that European firms are making similar mistakes when it comes to measuring online metrics.

"If you measure advertising purely in terms of click-throughs, you're missing out on a lot of relevant metrics."

In the European research, analysts found that many advertisers are now all but ignoring the Internet, thinking that the ROI levels are lower than they really are.

Steffen Engelhard, Jupiter MMR's European and advertising and marketing analyst, said that many consumer brand owners are being put off using the Net as another advertising medium, when, in fact,

(Continued on page 10)

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ware companies and business services are going the ASP route. Companies like Quicken, Microsoft and even mass specialized companies offering payroll services are now beginning to offer ASP-based solutions and services along with their popular software offerings.

By taking the ASP route, many of these companies have opened up whole new outlets for themselves, reaching businesses that may have wanted to use their software but found licensing, setup, and maintenance costs prohibitive.

In early July, Microsoft Canada Co. ([www.microsoft.com](http://www.microsoft.com)) launched iCentral.ca, an integrated set of Web-based software services that are supposed to help smaller companies better manage day-to-day business processes. The iCentral service was first launched in the United States in 1999 and Canada is one of three new international subsidiaries for the service.

Stefan Sharma, marketing manager for iCentral.ca with Microsoft Canada Co. in Mississauga, Ont., says that the Canadian service was launched because of the strong interest Canadian businesses showed in the U.S. service. Microsoft decided it would be best to create a Canadian-based iCentral service with content specific to the needs of businesses in this country.

That content is provided by a number of Canadian companies, including Canadian.com, MyWeb-CA, Segform, Wells, and WorldWeb, covering information on sales, marketing and strategy, accounting and finance, electronic government forms, online training and e-learning support, and customer referrals.

Sharma says the three pillars of iCentral.ca's services are building and maintaining a Web presence, improving marketing effectiveness, and managing and better communicating with online customers.

Drack's NetLedger solution gives companies with fewer than 100 employees tools to manage business processes, including financials, CRM, purchasing, and e-commerce.

"About 20 percent of Canadian small businesses have a Web site and some 33 percent of small businesses say they want to build a Web site. And of that 33 percent, 48 percent say they will build a Web site in the next 12 months," Sharma says. "That is a pretty significant number of small businesses that are seeing a need for a Web presence."

Some of the key services that come with iCentral.ca are domain registration, site

creation and hosting, business email, and consulting support. Included with these are tools for site management, traffic monitoring and building, a List Builder to help better understand who their online customers are, a communications center to manage email, online calendar and file

management, and SharePoint Team Services for creating online workspaces.

Monthly fees for iCentral.ca services range from US\$29.95 to US\$49.95 (Canadian pricing will be available later this year).

Not to be outdone, Redwood Shoes,

Calif.-based Oracle Corp. ([www.oracle.com](http://www.oracle.com)) has released its own suite of online services for small businesses. The Oracle Small Business Suite uses Oracle's NetLedger solution to provide companies with fewer than 100 employees tools to manage busi-

Continued on page 68

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# How private? Not very

## Free tool assesses e-commerce Web site privacy practices

By Tom Iversen

**B**y failing to protect the privacy of personal information, Canadian businesses have allowed e-commerce to stall and have turned away other customers in droves.

There were some of the provocative results. At *Asia Canada*, information and privacy commissioner for Ontario ([www.ontpc.com](http://www.ontpc.com)), made it the launch of the Privacy Diagnostic Tool (PDT), a series of tests that evaluate a company's privacy practices.

The PDT—which was designed by Canadian's connection with help from Greenleaf Inc. ([www.greenleaf.com](http://www.greenleaf.com)) of York, Ont., and Protonet/ShareCoopers ([www.protonet.com](http://www.protonet.com)) in Toronto—is offered for free to businesses.

The tool helps companies assess whether their information-management practices are privacy-friendly and are in line with the information privacy practices that have been adopted worldwide.

The PDT tests several areas including accountability, consent, accuracy, safe-

The tool gives an overall picture of a company's privacy policies and offers suggestions to improve consumer privacy protection.

guards, openness, and individual access. It then gives an overall picture of a company's privacy policies and offers suggestions to improve consumer privacy protection.

"The tool is to help a company get itself sorted-out as to where it should start, what it has in place and what it does not have in place," says Michael Deck, privacy director for with Protonet/ShareCoopers' global risk management arm in Toronto. "It is not intended to be an in-depth analysis of your entire privacy operations. It does not tell you if you are in compliance with any particular [privacy] act or legislation. It is intended to get businesses oriented to what the best [privacy] practices are so they can get a handle on what to do next."

Canadian notes that "pressure is mounting on a daily basis for companies to protect people's privacy. It is no longer business as

usual. Privacy and the public's response to privacy is becoming a key issue."

Companies have often failed in their mission to protect people's private information, says Canadian. As a result, people have begun to boycott online commerce because they don't trust many businesses to protect or stop the misuse of their confidential information. And when consumers must provide private information, many simply outright give false information.

"Eighty-four percent of Internet users say they now refuse to provide information because they are unsure what it will be used for."


In March, Statistics Canada found that consumer purchases online accounted for less than 0.1 percent of all personal purchases of products or services in 1999. This amounted to some \$41.7 million generated through online purchases. By comparison,

the total personal expenditure in Canada for 1999 came close to \$120 billion.

"Consumers are not happy," says Canadian. "Ninety percent of consumers say they want control over their private information and 84 percent of Internet users say they now refuse to provide information because they are unsure what it will be used for."

In response to this stalling of online commerce, federal, provincial, and territorial ministers met in St. John's, Nfld., in late May to discuss actions that needed to be taken to protect consumer privacy when online. It was recommended that legislation and policies in this area be updated and harmonized across Canada, and partnerships between governments, businesses, and consumers identify best privacy practices.

And in March, Ottawa-based Canarie Inc. ([www.canarie.com](http://www.canarie.com)) announced it was offering some 2,000,000 free to the Canadian Online Trust Project (COTF), the purpose of which is to help boost consumer confidence and thereby give a boost to e-commerce in Canada. □



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| OS: Windows XP                      | OS: Windows XP                      | OS: Windows XP                      | OS: Windows XP                      | OS: Windows XP                      |



**Advertisers urged to look beyond**  
Continued from page 14

they should be using the medium for their advertising—just like any other medium. *Engelquist* said that people have been too willing to write off the Internet as an advertising medium, mostly because of

data that suggests that online click-throughs are not as effective as had previously been claimed.

"I'll give serious advertising priority to terms of click-throughs, then you're missing out on a lot of relevant metrics," he said. The U.S. report, *Profits Are for Pure Plays*

*Proven Online Investment Strategies for Brick-and-Mortar Retailers*, confirms this analysis.

It concludes that brick-and-mortar companies in the U.S. that consider the non-transactional benefits of their Web sites will see a much higher ROI.

The research adds that brick-and-mortar retailers must strive to maximize their staff's ability to not only drive online sales, but to also drive informed customers into stores.

Ken Geiser, a senior analyst with the research firm's New York office, argues that brick-and-mortar retailers should try to look beyond the basic profitability of their Web site and assess the site's role in the entire organization.

Geiser's report says that 44 percent of U.S. retailers cite Web site sales as the main metric by which their Web operations success are measured, followed by 23 percent that are focused on profit.

This contrasts sharply with the report's parallel conclusion that 45 percent of U.S. consumers use Web sites to research products before buying the product in the same company's real-world stores.

**45 percent of U.S. consumers use Web sites to research products before buying the product in the same company's real-world stores.**

Geiser said that his research has shown that, for every dollar of sales generated directly by a Web site, a further \$35.50 worth of expenditure is generated in the company's stores.

"These retailers I have discussed this with have concluded that even these figures are conservative," he said, adding that firm suggests companies that are reining their investment in Web sites may actually be losing business overall.

Cassini's research also found that users of U.S. company Web sites are now falling mostly into one of two categories: online buyers and online researchers.

While the needs of the former are met by e-commerce-enabled Web sites, the needs of the latter clearly are not.

"There is a definite need for Web sites that meet the needs of both types of users. Brick-and-mortar companies need to make their Web sites a lot more educational, so that consumers can research their retail store purchases online," he said.

—Wendy Zorn

**Web site on Web signals healthy dog**  
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## Projections muddying future of m-commerce, report suggests

**NEW YORK**—What's down the road for consumer buying and selling via mobile phone is anybody's guess, considering the great disparity among research projections, according to a new report.

Forecasts for m-commerce (mobile commerce) revenue in 2004 range from US\$170 billion to US\$27 billion, based on data gleaned from reports from more than 100 research groups and consultants, according to a report published in August by market analysts at Fouraster (fouraster.com).

In its North American Wireless Report, Fouraster "conservatively" predicted that 36 million m-commerce users spending US\$50 each will buy US\$1.5 billion dollars in goods, services and applications on mobile devices in 2004.

Why does Fouraster feel its numbers more accurate than the others?

"If we took a middle of the road number, US\$4 billion in 2004, that equates to each m-commerce user spending in the order of US\$200 that year," Fouraster analyst Ivo Madelin said. "That seemed a little high to us, so we estimated that a little closer to \$50."

Besides, he said, there's no standard definition of what m-commerce is, making it difficult to predict its numbers in the future, let alone three years.

The extent of growth in the North American wireless market will carry a lot of weight in m-commerce over the next few years. "M-commerce will either 'lock-on' over the next 18 months with carriers driving new wireless data and Internet services, or it will fall further behind Europe and Asia and wither in a mire of competing technological platforms," Fouraster said.

Mobile Internet users in the U.S. will number from 40 million to 83 million by 2005, according to estimates cited by

Madlin.

Another area of disparity is projecting spending on m-commerce advertising, with

estimates ranging from less than US\$1 billion to nearly US\$7 billion by 2005.

—Anastyles

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Mobile phone penetration was 40 percent in the U.S. and 23 percent in Canada at the end of 2000, compared to nearly 80 percent in Taiwan, Austria, and Italy.

Mobile phone penetration was 40 percent in the U.S. and 23 percent in Canada at the end of 2000, compared to nearly 80 percent in Taiwan, Austria, and Italy. Fouraster said 157 million cell phones will be in use in the U.S. by 2004, compared to other predictions of 250 million by 2005, Madelin said.





"I think the PVR functionality is key to selling people on the ComboBox."  
—Glenn Ward  
Bell Canada

sort to your television.

Those as a wireless keyboard and a remote control, and you're completely wired to the world.

The ComboBox lets you switch TV while watching live news, engaging in a chat room session, or standing by for instant messaging. Bell is also equipping it with a browser, so that you can surf the Web at once.

And if you have a TV with picture-in-picture, you can watch and surf at the same time.

As well, the unit includes a 40 GB Personal Video Recorder (PVR) (It's based on the S-VHS 710. S-VHS is a picture-in-picture format with all its home satellite features.) The PVR is a next device. It's essentially a hard disk-based video recorder that provides the full range of VCR-style functions but doesn't need the tape.

"I think the PVR functionality is key to selling people on the ComboBox," says Glenn Ward, Bell Canada's vice-president of convergent technologies. "Just once during a box with DTH [direct to home] launch would be much less attractive."

#### Rogers Triple Play

For its part, Rogers Triple Play does everything the ComboBox does, except offering a PVR.

However, its architecture is much different. Based on Ustream Systems technology (www.ustrm.com), the Triple Play basically a server that just sits in the basement, and plugs in your cable TV, internet, telephone, TV connections, and even Internet appliances. Triple Play routes requests to all of them.

"The Triple Play server works across the existing pipes of your PC, TV, and telephone," explains Michael Lee, Rogers' vice-president and general manager of interactive services. "It's all about new wires."

It's also about home networking, which is where the Triple Play outshines the ComboBox.

With the server housed in the basement, it's ideally located to act as a home network hub. In contrast, the ComboBox is more of a landlocked TV-centric device.

#### Which should you buy?

Granted, neither device is available yet, but with the ComboBox slated for a 2002 rollout, and Rogers already testing the Triple Play in 50 households in the Ajax and Pickering regions of Ontario, it's worth considering now.

First and foremost, consider why you might want a convergent device. For instance, if you really want to be able to do everything from the comfort of your easy chair, then the ComboBox makes sense.

But if home networking is a must you want to crack, then the Triple Play is a better bet.

Then there's cost to consider. I'm not talking about the actual device cost; that hasn't been revealed yet by either company.

But if you're a cable TV subscriber, be aware that choosing the ComboBox will require you to sign up for both Bell ExpressVu (with the attendant dish antenna) and Bell Sympatico.

In contrast, if you're a Bell ExpressVu or Sympatico subscriber (or both), you'll have to sign up for cable TV and cable Internet access to make your Triple Play work.

The third factor to consider is compatibility. ComboBox has a PVR; Triple Play does not (at least not yet). For now it could be upgraded to include one as Rogers' Meanwhile, Triple Play is designed to port MP3 files directly to your stereo; ComboBox is not.

Then there's network reliability. Based on the vendor's experience, Sympatico High Speed DSL is very stable and reliable.

Meanwhile, Rogers' fibre is improving thanks to system upgrades, with any lack, the problems that plagued its network are largely a thing of the past.

That said, it would be wise to await this new device to your own house. A good place to get more feedback on Rogers' fibre program is at the Rogers'Interactive Users' Association Web site ([www.riua.org](http://www.riua.org)).

#### The stakes

One thing is certain: both Bell and Rogers, embarking on convergent devices to hold their turf in the brave new e-world, wish, if possible, to help them attract customers from each other.

So, although it may look like a setup on your TV, or a server in your basement, don't be fooled.

As for Canada's largest telephone and cable TV companies are concerned, they're weapons of war. ☐

James Gaudin is an Ottawa-based writer who can be reached at [jgaudin@post.quebec.net](mailto:jgaudin@post.quebec.net).



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## Handheld or hands-free, cell phones stymie drivers, study finds

**IRVING, IL.**—New research investigating the impact of cell phone use on automobile safety found that motorists can double their chances of missing traffic signals by chatting on the phone while they drive.

The study, conducted by researchers at the University of Utah, also found that the deleterious effect of mobile phones on the road was the same even when test subjects used hands-free devices.

"...initiatives that restrict hand-held devices but permit hands-free devices are not likely to reduce interference from the phone conversation, because the interference is, in this case, due to central attentional processes."

What's more, the study, conducted using simulated driving conditions, found that cell phones appear to cause more distraction for a driver than listening to radio or an audio book, or having a conversation with a passenger.

"This study adds new data to the ongoing national debate on driver distractions and their causes," Alan McKillop, president of the National Safety Council (NSC), an advocacy group, said in a prepared statement. "It underscores the importance of refocusing that a driver's primary obligation is to operate his or her motor vehicle safely."

The NSC, a private U.S. non-profit outfit,

is publishing the study's findings in the current issue of its *Accident Analysis and Prevention* journal.

The researchers, working on a larger project that will be unveiled up in a future issue of *Psychological Science*, utilized 64 undergraduate students who were randomly assigned to one of four groups—radio listeners, audio book listeners, handheld cell phone chatters, and hands-free phone users.

The test subjects received a jobpitch with a thumb-pushed "book" and were asked to respond to simulated traffic lights on a computer screen.

After talking with passengers or listening to radio or audio books shared about no degradation in their performance, the researchers reported.

However, although the number of missed signals was low even for cell phone users, it was double that of a control group that faced no distractions.

In addition, the researchers said, cell phone users were often slower to respond to the signals that they did not miss.

Because drivers using hands-free cell phones performed just as poorly, the researchers wrote, "Our data suggest that legislative initiatives that restrict hand-held devices but permit hands-free devices are not likely to reduce interference from the phone conversation, because the interference is, in this case, due to central attentional processes."

"We suggest that the cellular phone use disrupts performance by diverting attention to an engaging cognitive contact rather than the one immediately associated with driving," they wrote.

The NSC's McKillop said the industry

needs more research "to help us fully understand the public policy implications of the growing use of cell phones and other electronic devices—such as global positioning systems, faxes and computers—in moving vehicles."

In a statement issued in response to the University of Utah findings, the head of a cell-phone industry trade group said education—not new laws—is needed to increase driver safety.

"The wireless industry has long held that education is the key to addressing the issue of driver distraction," said Tim Wheeler, president and chief executive officer of the Cellular Telecommunications and Internet Association (CTIA). "Any activity a driver engages in, besides the task of driving, has the potential to distract."

"We must remind drivers that their primary responsibility is to drive safely and we must educate them on how to recognize when it's appropriate to use a wireless

phone, change a CD, or look at a map while driving," he said.

John Moffat, chairman of the National Association of Governor Highway Safety Representatives (NAGHSR), also said he didn't want the cell-phone safety debate to let off the hook other sources of driver distraction.

"In all these discussions, I'm concerned that the focus on technology is overlooking the fact that many crashes can be attributed to traditional distractions and not cell phones," Moffat said in a prepared statement. "The fact is that actions such as changing a CD, eating and reading while driving still contribute to many crashes even though much of the media attention has been on cell phones."

According to the National Highway Traffic Safety Administration (NHTSA), driver distraction is estimated to be a factor in 25 to 50 percent of highway collisions.

—Newswires

### Motorola connects keyboard to phone



Motorola (www.motorola.com) has released a keyboard to enhance the functionality of its R100i and other Web-enabled phones. The lightweight portable keyboard, called the Motorola iBoard, is the size of standard laptop keyboard.

Designed and manufactured by Think Outside (www.thinkoutside.com), it has function keys optimized for Internet-ready phone operations, reducing for accessing wireless Web services, launching applications, activating the speakerphone, turning off the phone and adjusting the volume.

The iBoard is currently available for US\$99.95 through Novell in the U.S. At press time, there was no information on its availability in Canada.

—EFP Staff



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## Digital divide opponents signs agreement with UN

WASHINGTON, D.C.—The Global Internet Policy Initiative ([www.gipolicy.org](http://www.gipolicy.org))—a coalition of U.S.- and European-based media and consumer groups working to bridge the digital divide—has signed a cooperative agreement to offer policy guidance to developing nations through the United Nations Development Program.

In July, Washington, D.C.-based Center for Democracy and Technology (CDT) and Internet2, a Illinois-based Internet age-profit, formed GIPi as a way to help developing countries enact policies that narrow the "digital divide," a phenomenon characterized by the limited access to communications technologies among the world's poorer citizens.

GIPi has announced that it has signed a memorandum of understanding with the UN Development Program, a global development project with offices in more than 200 countries.

CDT deputy director Jim Denney said the agreement lends GIPi a huge measure of credibility in the eyes of other nations.

"This means that GIPi can avoid being seen as another U.S.-based organization promoting American values, but rather as one that comes in partnership with a truly international body," Denney said.

In that regard, the group hopes to educate and advise government policymakers and grassroots advocates on a range of Internet policy issues, including universal service, privacy, technical standards, licensing, digital signatures, content con-

tents and the domain name system.

The apostrophe has been used to full-time "country coordinators"—mostly lawyers—who are familiar with the laws and languages of the countries in which they are stationed.

The group receives funding from a number of high-tech companies, including AOL, Time Warner and Microsoft, as well as the Soros Foundation and the Marilla Foundation, many of the same organizations that have funded the multinational Digital Opportunities Task Force, or "DOT Force" for short.

In June, the DOT Force released the results of a 10-month study, which acknowledged that at least a third of the world's population never has even made a phone call, much less used or seen a computer. In addition, few developing nations have the infrastructure or government market liberalization policies needed to attract private investors.

Denney said the announcement has already generated interest from several nations in South America. He added that GIPi is gearing up for even more interest from other governments in the months ahead.

"We are also looking at a number of partnerships with nonprofit and for-profit organizations that will allow us to respond to requests," he said, adding that the group also has focused pre-bid relationships with several leading law firms.

—Brendley

## Wording of European Union's e-commerce law stirs controversy

LONDON—The British government's ongoing plans to implement the European Union's E-Commerce Directive are stirring some furor.

Ever since the EU approved the directive in May, the U.K. Department of Trade and Industry (DTI) has been developing it for the British statute books. The directive seeks to define liability limits for Internet-connected sites and services.

In early August, the DTI issued a public consultation paper on the proposed U.K. legislation, asking for replies by Nov. 2, to give the British government time to implement it by Jan. 16, 2002. That is the deadline set by the EU for enforcement of the laws.

Problems are arising because of the wording of the consultation document, with some Internet service providers (ISPs) expressing concern about their liability for digital content.

ISPs are especially worried about chapter six of the consultation document, entitled "Liability of Intermediary Service Providers," which says that carriers cannot monitor the data relayed by the Internet user.

Although the consultation document says that "claims for damages cannot be directed against the provider for any form of liability," and that "the provider

cannot be subject to prosecution in a criminal case," the proposed legislation "does not exclude the possibility of an action for injunctive relief."

Peter Somers, an IT security analyst and risk expert, and a fellow of the London School of Economics, said the government has stated ISPs are not liable under the proposed legislation, unless they have been put on notice to that effect.

"Some ISPs are concerned that the wording of the proposed legislation is not clear enough," he said.

"We're getting back to the issue of whether an ISP is responsible for the actions of a subscriber with regard to libel and files of a pornographic nature," he added.

Somers said that his interpretation of the proposed legislation is that there is still plenty of time to clarify how the proposals will be interpreted before the consultation period ends.

"Since we have used November to get issues like these sorted out, the situation is a long way from being a fait accompli," he said.

The DTI has printed a copy of its consultation document on its Web site ([www.dti.gov.uk/e-commerce/e-commerce/e-commerce.html](http://www.dti.gov.uk/e-commerce/e-commerce/e-commerce.html)).

—Bradley

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**WCMAD debuts free-based music channel**

**LOHCOB** England—Ahead of many of the major record companies, Peter Gabriel's Real World Records has launched an Internet-based subscription music service on the WBRAD Web site ([www.wbrad.com](http://www.wbrad.com)).

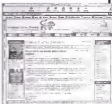
Dubbed the WOMAD Digital Channel, it will be free until October after which a \$13.37 (converted from 45) monthly subscription fee will kick in. Subscribers will receive up to 45 tracks per month from the Real World catalogue, as a package of 45 tracks selected by WOMAD.

The music channel uses tech files from being transferred to digital free to buy a permanent after a month.

According to WOMAR, the Hi Sound Systems, Ayub Ogada, Mu Demasika Bawa

The WOMAD (World of Music, Arts and Dance) festival in 1982

—Barnes, Hyatt



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### Sony Cyber-shots go small

Sony ([www.sony.com](http://www.sony.com)) has unveiled two slender Cyber-shot digital still cameras that are its smallest cameras to date.

The DSC-P5 and DSC-P6 bring new features to Sony's P series, including an AF Illuminator for focusing in the dark and two-shot burst mode.

Sony says both models have a simplified menu. Users can also create quick animations using Diaphana, which automatically combines up to 30 frames into a single sequence.

The DSC-P5 has a slim profile thanks to a two-step lens that retracts into the camera body and a tiny new rechargeable battery; the G-series Exilium, which has enough power for up to an hour of continuous shooting.

It has a 3X optical zoom, 6X digital zoom, and 3.3X megapixel maximum resolution.

The Cyber-shot DSC-P3 camera looks similar to the DSC-P5, but is faster and lighter due to a fixed 3X digital zoom lens. It has 3.3X megapixel maximum resolution and offers high-speed focus.

Both models use Sony's proprietary Memory Stick slot and come with an 8 MB media card, as well as the Exilium-based AC adapter/charger, AF and USB cables, and application software and drivers.

The new cameras are scheduled for release in October and have suggested prices of US\$180 (DSC-P3) and US\$190 (DSC-P5).

—TOP Staff



### Fujitsu introduces USB scanner

Fujitsu Canada ([www.fujitsu.com](http://www.fujitsu.com)) has unveiled the F-411203, its first USB scanner. The new 1100-4ed model has a maximum scanning speed of 15 ppm (page per minute) and has a duplex and colour capabilities.

The F-411203 is targeted for small office or distributed workplace environments. It has a daily duty cycle of up to 500 pages. The unit has a 50-page document feeder, a one-touch launch button, user-selectable document colours of red, green, or blue, and support for bi-racial, colour, and grayscale scanning.

It measures 30 (w) x 413 (d) x 112 (h) mm and can accommodate up to legal-size sheets (216x279 mm). It has a maximum output resolution of 600 dots per inch (dpi). The F-411203 has a suggested list price of \$325 and a one-year warranty.

—TOP Staff



### Wash from the ad post

Hi—Thumb through an old Life magazine and you'll see cheery old ladies in long skirts and party hats, the kids with the stagbees in their back pockets, del with a pipe in the only chair watching the new Admiral TV. All these ads featuring magazines and products are back, thanks to the Ad Access Project. Funded by the Duke Endowment Library, 2000 fund, this is a database of more than 7,000 advertisements that were printed in American and Canadian newspapers and magazines between 1915 and 1945. Ads for cars are categorized under the heading cars, televisions, transportation, beauty and hygiene, and World War II. The ads in retrospect tell quite a tale about our nation and our culture during the first half of the twentieth century.

<http://www.duke.edu/education/adaccess/>

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# Online & Connected

Internet Trends • Wired and Wireless • Online Services • Work & Play on the Web

## Linux browser wars

Opera, Netscape, Konqueror, Mozilla, Galeon, and Skipstone face off

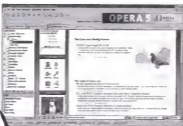
By Steve Cox

Once upon a time, you had a choice of one browser for Linux. That was the venerable Netscape, which, in all honesty, is a terrible browser for a variety of reasons, none of which I will elaborate on here.

Over the last few months, though, the situation has changed for the better, with a larger selection of browsers available for the platform than ever before.

Which is best? Well, while it's hard to reliably test stability in one that will crash a browser one day will work fine the next, in my experience, we can test loading times, page rendering times, the look of the browser, ease of configuration, and basically see what browser gives the best overall performance.

The browsers up for the challenge here are Opera, Netscape, Konqueror, Mozilla, Galeon, and Skipstone, the latter two being based



on the Mozilla engine. Head on over to [www.kde.org](http://www.kde.org) (see sidebar) for your downloading pleasures.

The first system is a low spec machine at

104 MHz Pentium (no MMX), 32 MB of RAM, running Mandrake 8, and the Blackbox window manager. All browsers are versions that shipped with Mandrake

*Continued on page 81*

Watching your own Web site

## Dynamic Web page development using PHP: Part III

By Keith Schenpig-Raborts

In the last article in this series, we looked at some ways to enter the name of your PHP installation, allowing us to include statements to create standard headers and footers for the Web pages on your site, and learning how to create a dynamic, ever-changing display using a random function. This article looks at how you can easily create forms using PHP combined with JavaScript.

Forms help make Web pages truly "interactive," allowing the user to make choices or submit information to a Web site. Whether it is simply clicking a

"search" button on a search engine or submitting your address information as an online commerce application, forms are the basis for a truly interactive Web. PHP considerably eases that process by including a number of simple functions designed to easily process the results from a standard HTML form.

### Step 1: Building the form

One of the more common types of form functions you'll see on the Web are forms that allow a user to input information about themselves and submit it to the Webmaster. A good form of this type will include error-checking mechanisms to

ensure that all of the required fields are complete before being submitted and will indicate to the user that the information has been sent to the Webmaster. When the form is submitted, the Webmaster is sent an email containing the details the user has submitted. A simple enough process to describe, but it can be tricky to program. One of the great things about PHP is that only a few lines of code are necessary to handle this process, and the code is very simple to understand.

First of all, we need a simple form that we will process with our PHP code. It will contain a number of required elements,

*Continued on page 84*

## People change once they go broadband, researcher finds

NEW YORK—Broadband, it turns out, changes folks. Or, at the very least, it changes the way they act once they get online, according to a recently released U.S. survey from Nielsen/Nielson (www.nielsen-netratings.com).

The Web audience measurement firm released data showing that people in the U.S. who recently switched to broadband Internet services like digital subscriber lines (DSL) or cable modems used up spending more time online, viewing many more Web pages, and clicking themselves in front of their computer monitors more often.

"Across the board, broadband surfers exceeded their Web usage when they upgraded to broadband," the company said.

### Surfing before and after broadband

|  | Jan '01     | July '01    | Change |
|--|-------------|-------------|--------|
| Pages viewed (mill.)                     | 2.4 billion | 3.5 billion | 150%   |
| Pages per session                        | 23.1        | 13.9        | -40%   |
| Sessions per person                      | 33.63       | 1750        | 51%    |
| Time spent online (per person) (in min.) | 12.71       | 21.36       | 21%    |

Source: Nielsen NetRatings. Figures are based on data collected from Jan. 1 through July 31, 2001. Figures are based on data collected from Jan. 1 through July 31, 2001. Figures are based on data collected from Jan. 1 through July 31, 2001.

The survey shows a sharp spike in the number of pages seen broadband users viewed between January—before they got broadband service—and July, after upgrading their bandwidth. New broadband users viewed 3.5 billion pages in July after switching from dial-up accounts, said Jon Raborts, vice-president of analytics services at Nielsen/Nielson. That compares to 2.4 billion page views just six months before, at the start of last bandwidth days.

"The same set of people are seeing 136 percent more pages," Raborts said.

Further, Nielsen members reported, new broadband users in the U.S. increased their monthly Web sessions by 25 percent, sitting down to surf an average of 28 times in July compared to 12 in January.

*Continued on page 78*





Galileo was the surprise of the test. While the look of the interface is terrible, the performance was fast and slick, and the ease of changing the options was second to none. As someone who usually turns on JavaScript or images when browsing, but needs them for several sites, it's great to see someone design a browser with that in mind.

Shogun was the biggest disappointment: It performed well in some of the tests, but has a few flaws, such as getting disappearing while being used, and it was the only browser to crash during the tests.

Overall, the browser score as Linux is looking very good, and we finally have a choice. After the testing, if I had to recommend a browser, it would be a very close call between Galeon and Opera, with Galeon squeaking out a victory.

Opera is thick, but its page rendering is nothing short of heavenly. Galois performed well in all tests, real, not fiction mode, it's a good choice.

As its scorable menu should go to Karpov, of the other browsers, it was the racist, and worse, big points for making you to tell yuppies—a feature I hope is abandoned in more browsers.

One final comment: only Netscape actually comes with built-in Java support. For the others, you'll need a Java component or run-time engine.

—Canada.com

Sony Cyber-shot meets his

Another recent digital still camera release from Sony ([www.sony.com](http://www.sony.com)) is the Cyber-shot DSC-F302.

Sony says the camera features new technologies that make previously difficult pictures easier to shoot. Priced at about US\$1,600, the S magnum camera is the first of its kind for the consumer market.

The ZDC FIVE has numerous manual and automatic controls. Carl Zeiss optics, and an advanced automatic focus system. It features a precision Carl Zeiss Vario-Sonnar M1 optical zoom lens with F2.0 aperture; a 3.8 inch high-LED screen and an eye-level electronic viewfinder; high speed Autofocus and manual focus ring with LED magnifier; Hologram AF (Sony's laser technology for focusing accurately in low-contrast and dark conditions); several waiting options including multi-pattern warning, which divides a scene into a matrix of 16 that can be metered separately; and Highlight mode (for capturing highlights when there is no light).

PC-727 captures both stills and short video clips in a variety of formats and offers editing functions. It also has a CyPicture feature for creating 3D pics. It uses Sony's proprietary Memory Stick slot and comes with a 38 MB built-in hard drive. In addition, it has an AV output and USB cable.

— 127 —





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## Word fields



### What are field codes?

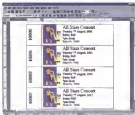
Field codes are placeholders in a document that mark where some reusable text will appear. For example, if you want to place the current date in a document, you can use the Date field. Because it changes every day, a field code or placeholder is, and rather than the actual date as it will appear when the date changes. Word allows you to choose whether you want to see the field codes in your document or at all, and you can only switch between the two.

To enter a field code at work, press Alt + Shift + D to insert a Date field in your document. This will allow you to see the current date or the Date field code. You can switch between the two by pressing Alt + F9 (this is a toggle shortcut key and switches between displaying all the field codes in a document and displaying their results). The field code will look something like:

```
{DATE \@ "MM/DD/YYYY"}
```

### Inserting field codes

There are many ways to insert most of the available Word fields in your document. You've just seen the shortest option. You can also insert a date by using Insert, Date and Time, select the ac-



Automatically updating fields is easy in using Word's field code.

and date format in the list, enable the Update Automatically checkbox and click OK. This inserts a Date field that has the date is probably formatted a little differently. You'll see the format specified as the field code itself when you display it (Alt + F9). Many of the items on the Insert menu are actually Word field codes.

You can also insert a Word field code (if you choose Insert, Field, then select the field code from the list. To try this, choose Insert, Field, then from the Categories list choose Date and Time, and then from the Field Names list choose Date. Now click Options and choose the General Switches tab. Here are the available options:

Continued on page 304

[Java Tutorial: Part 10]

## Strings in Java

### By Jacques Savoyeur

String manipulations are important to every programming language, but especially so for Java. Because Java has become the language of the Internet, it is now used for assembling and disassembling IP and other communication protocol packets, parsing HTTP, FTP, HTML, XML tags, etc.

In general, doing elaborate String manipulations is a remarkably large chunk of Java applications. So getting to know the Java String manipulation capabilities is important. And for a variety of reasons Strings are one of the most ubiquitous

of Java language constructs.

If you are a C or C++ programmer, you'll find the following 100 names "the String class is not equivalent to a char[] array."

In fact, first on our list of commonly used String functions is `toUpperCase()`, which transforms a `char[]` array to String. Perhaps it is best to skip the definition of String directly from the Sun Java API references. "The String class is used to create and manipulate fixed-length text strings."

The key here is that a String is of fixed length and any change to its length by operations like `trim()`, `substring()`, and `concat()` work by creating a brand new

String. The old String is marked as null, discarded and made available for garbage collection.

This, therefore, is the fundamental performance trade off associated with using Strings: if your String operations involve lots of concatenations, character adding/subtracting, or deletions you may want to use the rather slow `StringBuffer` along with String to do your advanced text manipulations. If you are not parsing the String and not changing it, you can easily stay within the String class.

Unfortunately, Sun is its wisdom declared in the Java API that both String

Continued on page 106

### Quick Tips

## Fabulous Excel functions

By Helen Bradley

### Random numbers

Use the `RANDBETWEEN` function—part of Microsoft Excel's Analysis ToolPak—to return a random integer between any two numbers that you want to specify. For example, to return a random integer between 10 and 100 (including both numbers), type:

```
=RANDBETWEEN(10,100)
```

### Days worked

The Analysis ToolPak's `NETWORKDAYS` function calculates the number of workdays between two dates taking into account holidays that you specify. First the holidays across a row or down a column and name this range Holidays. A function like this will give you the number of workdays for the month of October (taking into account holidays that fall in that month).

```
=NETWORKDAYS(STARTDATE,ENDDATE,HOLIDAYS)
```

### Effective rates

If you're receiving a 4.25 percent interest per annum and the amount is compounded quarterly, the rate you're actually receiving is higher. To calculate how much higher, use the `EFFECT` function to calculate the effective interest rate.

```
=EFFECT(4.25%,4)
```

### The end of the month

The `EDATE` function returns the last day of the month. It's syntax is `date (the date to measure from), and months (a positive or negative value representing months ahead or prior to the date)`. So, the last day of this month will always be:

```
=EDATE(TODAY(),0)
```

### Pinpoint lookups

Lookups aren't the simplest (and functions to create. If you need one, use the `LOOKUP` Wizard Add-in. Choose `Yes`, `Advanced`, then select the `Wizard` you chose. `Yes`, `Wizard`, and `Lookups`, then step through the Wizard to create the lookup function.

### On-the-fly conversions

The `CONVERT` function converts from one

Continued on page 106

# Java Introduction: Part 10

Continued from page 10

and StringBuffer are to be fast. This means neither class may be inherited or extended. Fortunately, I have some implementations of a Test class that, in effect, copies StringBuffer code then adds String plus additional functionality to form an alternative to the String and StringBuffer classes.

I leave this as an exercise to the reader: how to create a rigorous superset of the String class (it is not easy).

String is a predefined, specialized class in Java and not a primitive type like boolean, int or double. String is specialized because it has a number of added functions other classes do not have in Java.

First, the plus operator is overloaded for Strings in Java and indicates concatenation. It is one of the few cases in Java in which operator overloading is allowed. In fact, operator overloading is one of the C++ functions that writer Richard Jones had realized [and is part of Microsoft's new Java-derived language C#, or CSharp]. In addition, the assignment operator acts as a constructor for Strings. The following two statements are equivalent:

```
String firstString = "Hello" + " World",
String second = new String("Hello World");
```

## Common String functions in Java

| String function                                | Description   |
|--|---|
| String()                                       | Constructs a String for local, StringBuffer, String, char[]       |
| static String copyValueOf(char[] value)        | Copies char array into internal String                            |
| static String valueOf(Object obj)              | Converts long, float, double, int, char, or Boolean into a String |
| char charAt(int index)                         | Returns character at position index in this String                |
| compareTo(String anotherString)                | Compares this and another String, lexicographically               |
| compareToIgnoreCase(String anotherString)      | Compares this and another String, ignoring case                   |
| String concat(String str)                      | Concatenates this and the argument String                         |
| boolean endsWith(String suffix)                | Returns true if suffix is at end of this, like isMatch            |
| boolean equals(Object obj)                     | Returns true if obj is a String with same characters as this      |
| boolean equalsIgnoreCase(String anotherString) | Compares this and another String as defined in this version       |
| int hashCode()                                 | Returns positive value using different sequence of the bits       |
| int length()                                   | Counts characters and returns the length of this String           |
| String indexOf(String str, int fromIndex)      | Returns index awareness of char with case in this String          |
| String lastIndexOf(String str)                 | Returns true if the argument with prefix                          |
| String substring(int start)                    | Returns substring of this that begins at start and goes to end    |
| String toLowerCase()                           | Returns String with all characters reduced to lowercase           |
| String toUpperCase()                           | Returns String with all characters increased to uppercase         |
| String trim()                                  | Removes leading and trailing blank from both ends of string       |

Note: No index is the last index String, this for matching characters "0" & ending

The second idiosyncrasy of Strings is that they use the same rules as arrays. The following code helps to explain:

```
public class ill {
    public static void main(String args[]) {
        // char 10 before is an array of chars
        String s0 = "Hello", "World";
        for (int i = 0; i < 2; i++)
```

```
{
    // Print also that ill array start at index 0
    System.out.println(s0[i] + " starts with " +
        s0[i] char 10);
    // Finally note that the first character of a String
    starts at 0 also
}
```

This Java program when run will print the following before exiting:

## Hello World

### A parser in Java

As noted in the introduction, Java programmers find they are consistently required to parse Strings or even files of characters or information in text form. We have written a simple parser that illustrates the range of some of the common String functions.

Our program gets to show off how some of these String functions are typically used to parse a line of text. Here is the code:

```
import java.lang.*; import java.io.*;
public class parser {
    // All the fields will be public for ease of access
    public int posn; public int period; public char
    page;
    // problem here takes tells 3 things
    // where it ends in the line - start
    // where it ends in the line - period
    // and what type of token it is,
    // currently just a - operator
    // 0 = for string
    // 1 = no number, 2 = keyword, 3 = variable name or
    other possibilities
    public char
    token;
    // the Constructor is simply evaluated
    parser() {
        posn = 1;
    }
}
```



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# Word Fields

Continued from page 68

for this particular field, the box now shows the data format from the last displayed and click Add to Field to include it to your field code, then click OK, and OK again.

Another option for inserting field codes is to type them yourself. While it may look like you can simply type them inside a set of curly brackets, this isn't the case. You must use Word's shortest key combination: Control + F9 to insert a set of field code markers, then you can type your field code inside those markers. To create a date field code, press Control + F9 then type DATE \@ "mm/dd/yyyy". Move away from the code and, if the date doesn't appear, select the entire code and press F9 (this shortcut key updates the selected field).

## Click Here block

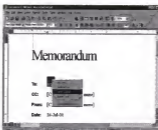
Now that you've seen how to insert a field code and use one of our field codes, let's look at another, the MacroButton. This field is great for creating Click Here blocks in your documents. For example, if you're creating a template for others to use, you can insert a Click Here block with some explanatory text to indicate what data should be entered at that point. When the user has read the information and they click the block, their text replaces the

instructions and the field disappears.

To see how this works, open a new Word document and click where some text is to appear. Now choose Insert > Field, then choose Document Automation from the Categories list and MacroButtons from the Field names list. In the run area at the foot of the dialog box, type the following: Click here and type the address. Click OK. If field codes are set to display, you'll see an error message. Click here and type the address. Before you test this, save the file. Then click and test it. You'll see the field code text disappear as it is replaced by the text you type.

Using Click Here blocks in your templates allows you to mark key areas for the document user to type into. It also allows you to include explanatory text inside the markers to help users understand what is required at specified points in a document.

If you want to show the Click Here fields (and you say other fields in the docu-



This document is created with a Word field code, allows users to quickly fill fields in a document.

ment) as shown on the screen as they stand out, you can do this by choosing Tools, Options, View, then from the Field Shading dropdown list select Always, and click OK.

## Creating fields

Field codes can also be used to create tables for forms and tables. Word will number the tables sequentially starting at any number you want. You can also set the

document up so the table code and the table have the same number.

To show how this is done, here's a simple example that creates six tables on a single page. Begin with a new Word document and choose Table, Insert, Table, then set the number of columns to two and the number of rows to six and click OK. Drag the dividing line between the columns to the left so that the left column will become a narrow table code and the right column the table itself. Drag the bottom border of the table down till it sits just inside the bottom margin of the page (use the vertical ruler to see where the margin

ends). Select the table by clicking inside it and choosing Table, Select, Table, then Table, AutoFit, and Distribute Rows Evenly. Now type the text and insert any images you want in the top-right cell, which will become your first table. When you're done, copy this to the cell below if you'd like the numbers on the table to appear rotated, select the entire first column and choose Format, Text Direction, and select

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one of the two sorted list options.

To enter the numbering into the first cell, click in the top-left cell (the first cell) where the numbering is to go and choose Insert then Field from the Categories list select Numbering, and from the Field names list choose SEQ. In the text area below, type the word list after the word SEQ, then click Options, and choose the Field Specific Switches tab. Click the 1c field, click Add to Field. After the 1c is in the text area at the bottom of the dialogue, type the starting number for your tickets (for example, 10000) and click OK twice. The word Ticket is the name you're giving to your auto-numbering sequence and the 1c switch sets the starting number for the sequence.

Now to add the issue number to the ticket stock, click in the top right cell where the number is to appear and choose Insert then Field, from the Categories list choose Numbering and from the Field names list choose SEQ. In the text area below type the word Ticket after the word SEQ, then click Options and choose the Field Specific Switches tab. Click the 1c field, click Add to Field. Then click OK, and OK again. Notice that you use the same Ticket to construct the pre-counting auto-numbering sequence and the 1c field simply copies the next closest issue sequence number so you get the same number twice.

Into the second cell on the left you have another steps to add a field that will contain SEQ tickets and in the second cell on the right you'll repeat the steps that you used to create the call above. When the cells in the second row are complete, you can copy the entire row by selecting both cells and choosing Copy. Now select the third row and choose Paste. Continue to Copy and Paste until you've created all the tickets you need (as to many as you think reasonable to place in a single document). Remember to copy the data from the second row and below (don't copy the top row of the table as it contains the serial number for the ticket sequence).

If your numbers aren't updating, don't worry. When you're finished copying, select the entire document by choosing Edit, Select All, and press F5 to update all the field codes.

#### Right-click selection box

The final use we have for Word's Field codes is a selection list you can create to allow you to insert text from a list that you set up for them. It's a neat tool that uses Word's AutoText field and it is fairly easy to create.

Choose Insert, Field, and from the Categories list select Links and references and from the Field names list choose AutoTextList. In the text box after the word AutoTextList type the word "M" (include double quotes). Click Options, choose the Field Specific Switches tab, choose the 1c switches, and click Add to Field. In the text area below, after the 1c entry, type "M" inside quotes (this is a style name, which we'll set up shortly).

Now, to set the screen tip as it prompts the user, choose the 1c switch and click Add to Field. In the text area below, after the 1c entry, type "Right click and select a person from the list" inside quotes and click OK twice. Your field code should look like this:

REF:000101 "M" "M" "Right click and select a person from the list"

To create the list of names, start a new line in your document and type each name, one per line, pressing Enter between each one. Select the list of names and, in the Style box on the Formatting toolbar, type list in the new style name and press Enter. Click the Show/Hide button on the toolbar so you display the paragraph markers in the document and, without selecting the paragraph marker, select the first person's name and choose Insert, AutoText, Now, then click OK (or simply press Alt + F5).

Repeat this and add an AutoText entry for each person in your list. You can now remove the names from the document leaving just the field code in place. Save

your document.

To test the field code, hold your mouse over it and wait until the screen tip appears displaying the Help text you typed. Following the 1c switch. Now right-click and you'll see the list of names appear. Choose a name from the list and it will appear in place of the word M in the document.

Now that you have the list of names, you can create the dropdown list at any time in the future by simply entering the field code in any new document. If you plan to use this list regularly you can create the field code itself as an AutoText entry by creating it, deleting it, and choosing Insert, AutoText, then New Type a name for the entry (M is a good choice) and click OK. Now you can create the field code at any time by typing M and pressing F5 (you can use this same method to make any field code an AutoText entry).

There are plenty more Word fields you can use that will help you automate your documents and you'll find some useful information about them in Word's Help feature. □

Steve Brading specializes in writing books on Microsoft products, space regularly in a number of publications in Australia, Canada, the U.S., and the U.K. Contact Helen at [helen@stefbrading.com](mailto:helen@stefbrading.com)

#### Quick Tip: Valuable Excel Functions

Continued from page 59  
unit of measure to another. For example, to convert 32 degrees Fahrenheit to its Celsius equivalent, use this function =Convert(32,"F","C"). There are plenty of conversions it can help with. Look to help to see what conversions it will perform and how to specify each unit of measure.

#### The second largest value

Use LARGE to extract the nth largest value from a list. Using =LARGE(A1:A100,2) returns the second largest value, change the 2 to a 1 for the largest and to a 3 for the third largest, etc.

#### Squares and exponents

To square a number, enter it in the power of two, so two squared will be calculated by =2^2, and two cubed by =2^3, etc. To find the square root of a number, use the SQRT function. The square root of 144 can be obtained using =SQRT(144). You can also enter the number in the power of one half to find the square root, so =144^(1/2) works just the same. And it extends easily to cube roots and beyond. The cube root of 27 is =27^(1/3) or, find out.

Continued on page 126

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# AD INDEX

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|                           |     |                            |        |                    |     |
|---------------------------|-----|----------------------------|--------|--------------------|-----|
| Canadian Education Centre | 109 | Edison                     | 15     | VideoBook Internet | 34  |
| CANNET Technologies       | 109 | Forbes Canada              | 44     | Rams               | 109 |
| COMNET CENTER             | 104 | GO2000 SYSTEMS             | 35     |                    |     |
| Coselco                   | 104 | Gigabyte                   | 17     |                    |     |
| HIGH-TECH INNOVATIONS     | 105 | GoGo Computers             | 35     |                    |     |
| HighNet Networks          | 105 | Inteltek Packard           | 5      |                    |     |
| HighNet Networks          | 105 | Info                       | 108    |                    |     |
| Microcam                  | 108 | IT-Net Computer            | 44     |                    |     |
| Net-Har                   | 108 | IT Technology              | 54     |                    |     |
| Software                  | 102 | ITC Computers              | 11     |                    |     |
| Toronto Image             | 104 | Ilwaco                     | 21     |                    |     |
| Transwestlink College     | 105 | Intelligent Systems Inc.   | 61     |                    |     |
| Wireless                  | 108 | IPC: The Intel Group       | 112    |                    |     |
| Xerox                     | 103 | Intel USA Corp.            | 53     |                    |     |
|                           |     | Net Computers              | 61     |                    |     |
|                           |     | ITV Computers              | 61     |                    |     |
|                           |     | Lynx Computer Sales        | 93     |                    |     |
|                           |     | LG Electronics             | 71     |                    |     |
|                           |     | Lute Computer              | 10, 87 |                    |     |
|                           |     | Lute Computer House        | 45     |                    |     |
|                           |     | MCG                        | 8      |                    |     |
|                           |     | Metapoint                  | 89     |                    |     |
|                           |     | Mighty Mail                | 55     |                    |     |
|                           |     | MIT                        | 66     |                    |     |
|                           |     | Monitor Depot              | 61     |                    |     |
|                           |     | MSI Computer               | 61     |                    |     |
|                           |     | Multimedia Effects         | 41     |                    |     |
|                           |     | New Legend                 | 54     |                    |     |
|                           |     | OP Tech Computers          | 75     |                    |     |
|                           |     | PC Village                 | 61     |                    |     |
|                           |     | Pinnacle                   | 76     |                    |     |
|                           |     | Reckitt                    | 95     |                    |     |
|                           |     | Samsung                    | 5      |                    |     |
|                           |     | Small Computers            | 100    |                    |     |
|                           |     | Sign Computer              | 33     |                    |     |
|                           |     | SIMACO                     | 64     |                    |     |
|                           |     | Stylus                     | 29     |                    |     |
|                           |     | Smart-Warehouse            | 35     |                    |     |
|                           |     | Sonnet Computers           | 10     |                    |     |
|                           |     | Sony Computer              | 95     |                    |     |
|                           |     | Superdata Technology       | 95     |                    |     |
|                           |     | The Computer Edge          | 23     |                    |     |
|                           |     | The Intel Canadian         | 54     |                    |     |
|                           |     | Throne Computers           | 61     |                    |     |
|                           |     | Toronto Technologies       | 50     |                    |     |
|                           |     | Telus                      | 94     |                    |     |
|                           |     | Uta-Soft                   | 37     |                    |     |
|                           |     | Usenet Computer            | 83     |                    |     |
|                           |     | Nirxal Computers           | 11     |                    |     |
|                           |     | Winone                     | 98     |                    |     |
|                           |     | World's Cheapest Computers | 35     |                    |     |
|                           |     | Warehouse                  | 35     |                    |     |
|                           |     | Whisper Operation          | 27     |                    |     |

## CD-ROM

|             |     |  |  |
|-------------|-----|--|--|
| CD Creation | 108 |  |  |
|-------------|-----|--|--|

## Computer Books

|                           |     |  |  |
|---------------------------|-----|--|--|
| Computer Warehouse Online |     |  |  |
| IBM                       | 108 |  |  |
| IBM PC                    | 76  |  |  |
| Geo-Net                   | 28  |  |  |
| IBM Computers             | 108 |  |  |
| Page Bytes                | 77  |  |  |
| TOP SYSTEMS               | 10  |  |  |

## Events

|                |    |  |  |
|----------------|----|--|--|
| Completed 2001 | 65 |  |  |
| Workshop       | 56 |  |  |

## Hardware & Software

|                               |    |  |  |
|-------------------------------|----|--|--|
| IP Computers & Network Canada |    |  |  |
| A TOF COMPUTERS               | 10 |  |  |
| A-Data                        | 82 |  |  |
| A.C. Tech                     | 82 |  |  |
| ASC Computer                  | 59 |  |  |
| Audi                          | 64 |  |  |
| ACM Computer                  | 10 |  |  |
| Advanced Computer             | 10 |  |  |
| Advantage Computer            | 32 |  |  |
| Alomate Source                | 32 |  |  |
| ARK Services                  | 33 |  |  |
| Ark Computers                 | 44 |  |  |
| Ark Media                     | 94 |  |  |
| ARK                           | 95 |  |  |
| Brighton Computers            | 83 |  |  |
| Canada Computer               | 70 |  |  |
| Canon                         | 32 |  |  |
| Computer Depot                | 26 |  |  |
| Computer Central              | 45 |  |  |
| Computer Store                | 10 |  |  |
| CTA                           | 14 |  |  |
| Cytosine Computers            | 14 |  |  |
| Def Canada                    | 2  |  |  |
| Dynalco                       | 40 |  |  |
| Dynamic Computer              | 36 |  |  |
| Edison Com                    | 21 |  |  |

## Macintosh

|             |     |
|-------------|-----|
| Smorgy Macs | 109 |
|-------------|-----|

## Notebooks

|       |    |
|-------|----|
| Apple | 47 |
|-------|----|

## Service & Consulting

|                      |        |
|----------------------|--------|
| OSI Technologies     | 108    |
| ComNet Services      | 105    |
| DarkoverPC.com       | 108    |
| Doc Hider            | 108    |
| Infomax Consultants  | 104    |
| Laguna               | 76, 81 |
| Monroe Plus Inc.     | 109    |
| Monroe Repair Centre | 109    |
| Monroe Consulting    | 109    |
| Offshore Consultants | 108    |
| Quantum Media        | 109    |
| Roscom               | 109    |
| SFO Technologies     | 108    |

## TCP Services

|                   |     |
|-------------------|-----|
| ehyco             | 76  |
| TCP Subscriptions | 108 |
| TCP Surveys       | 108 |

## Toner Remanufacturers

|                   |    |
|-------------------|----|
| APD International | 87 |
| Complete Canada   | 80 |
| Minel-Low         | 85 |

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### Quick Tips: Publication Based Functions

Continued from page 105

#### Now or later?

To return the current date and time, use =NOW(). To get the date but not the time, use =TODAY(). Of course the time is based on the computer's clock, so if it's wrong, the date and time will be too.

#### When was that printed?

Add an entry into a cell on the worksheet to show the date and time it was printed using a combination of the NOW and TEXT functions. For example: =TEXT(NOW(),"MM/DD/YYYYYY AM")

#### Sum these if ...

The SUMIF function adds a range of numbers if they comply to a stated condition. For example, this function adds all the numbers in the range B2:B100 for which the corresponding entry in column A is two: =SUMIF(A2:A100,"2",B2:B100).

#### SUMIF help

If you're having difficulty getting a grip on SUMIF, fire up the Conditional Sum wizard. It's an add-in, so make sure it's enabled using Tools, Add-Ins, then find it on the Tools, Wizard menu, which will step you through creating a SUMIF function.

### Quick answers

Simply highlight a series of numbers on a worksheet and the Status bar will show the result of one of a number of functions applied to these numbers. With the numbers selected, right-click the function in the Status bar of the status bar and choose from the functions listed (Sum, Average, Count, Countblank, Max and Min).

#### More information?

Why not take a very brief look at some of Excel's functions here. If you want to know more, see Excel's Help and type the name of the function into the Answer Wizard to get more useful information and examples.

#### Analysis ToolPak missing?

Check that the Analysis ToolPak is installed by choosing Tools, Add-Ins and look for Analysis ToolPak in the list. If it doesn't appear, unload it from your original Microsoft Office CD. Once the ToolPak is installed, load it as an Excel Add-In by choosing Tools, Add-Ins, selecting the Analysis ToolPak checkbox, and clicking OK.

Excel's functions are in writing books or tables, the columns appear regularly in a number of publications in America, Canada, the UK, and the U.S. (Cover Index at <http://www.mhprofessional.com>).

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